



LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	DIRECTORS	
From:	Ann Marie Donlon	Environmental Licensing Programme
Date:	08 TH OCTOBER 2008	
RE:	Application for a Waste Water Discharge Licence from Cork County Council for the Ballincollig and Environs Agglomeration, Reg. No. D0049-01.	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of more than 10,000.
Licence application received:	14/12/2007.
Notices under Regulation 18(3)(b) issued:	04/04/2008.
Information under Regulation 18(3)(b) received:	30/06/2008.
Site notice check:	03/01/2008.
Site visit:	09/09/2008.
Submission Received	None.

1. Agglomeration

This application relates to the Ballincollig and Environs agglomeration. Waste water is collected in a partially combined foul and separated foul sewage drainage network.

The Ballincollig WWTP provides secondary treatment by extended aeration. The plant consists of coarse and fine screens, grit removal, an oxidation ditch, three clarifiers and four storm water holding tanks. Although the oxidation ditch is designed to treat 31,500PE, it is limited by the hydraulic capacity of the clarifiers (~24,600PE). The current plant was constructed in the 1980's (replacing an older 1960's plant) and has only recently (June 2008) completed an upgrade to increase the clarifier capacity and provide storm water capacity. An Environmental Impact Statement did not accompany the application. Standby pumps, generators and fans are available at the WWTP to ensure continuation of the works.

Waste water is a mix of domestic, commercial and industrial and varies seasonally with tourism. The current load from the agglomeration (includes for consented but not yet constructed development) is reported as 20,660PE and 24,542PE. The non-domestic

contribution is estimated as a maximum of 33% of the load. There are no IPPC or waste licensed activities within the agglomeration.

2. Discharges to Waters

The primary discharge (SW01) from the WWTP is to the River Lee (receiving water). The recent upgrade will ensure that the quality standards specified in the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001) (UWW regulations) can be met. Monitoring undertaken for the purposes of the application process did not indicate that elevated levels of any of the dangerous substances, as defined in the Dangerous Substances Directive (2006/11/EC), were being discharged. The primary discharge is monitored by Cork County Council accredited laboratory on a monthly basis and analysis is undertaken on a composite time-based sample. The discharge pipe is located on the bank of the river.

There are 11 pumping stations within the agglomeration. There are four emergency overflows from these stations. Emergency overflows come into operation in rare circumstances such as power failure and are not considered further here or in the Recommended Licence (RL).

Storm water is a major problem affecting the collection system and the treatment plant as storm water arrives at the plant within 30 minutes of the start of a rainfall event. At the head of the WWTP an overflow weir diverts the excess storm flow to four storm holding tanks or in the event of a deluge a second weir is activated and discharges are routed directly to the receiving water. The holding tanks have a total capacity of 1000m³ but this does not fully satisfy the requirements of the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows, 1995'. Excess storm water is discharged through SW01 and another point (SW03). No information on the conformance of this second point has been provided although a storm holding tank is in situ. The Recommended Licence requires this SW03 to be assessed for compliance with DoEHLG guidance. No other storm water overflows have been identified.

3. Receiving waters and Impact

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

Table 1. Receiving waters

Characteristic	Classification	Comment
Receiving water name and type	Lee River	Discharging to Cork harbour. The Lee Estuary/ Lough Mahon is designated as sensitive.
Resource use	Drinking water	Lee Road Water Works drinking water abstraction within 10 km downstream
Amenity value	Fishing, water sports	Salmonid River
Applicable Regulations	Salmonid Regulations ¹ Phosphorus Regulations ³ Dangerous substances ⁴ Abstraction Regulations ⁵	Compliant except Nitrite exceedances ² Compliant Compliant Compliant at intake
EPA monitoring stations	19L030600 19L030700 Leemount	Upstream 2.1Km Downstream of 1 ^o discharge
Biological quality rating (Q value)	Q3 upstream '05 Q4 downstream '05	Source of pollution upstream of agglomeration
Target Q	Q4	P Regulations compliant
WFD status	1a (at risk of not achieving good status) '05	
WFD protected areas	pSPA (4030)	Site 17 km downstream.

	River Lee Lee Road Water Works Lee Estuary/ Lough Mahon	Salmonid water Drinking water <10km downstream Sensitive water <10km downstream
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Note 1: European Communities (Quality of Salmonid Waters) Regulations, 1998. S.I. No 293 of 1988.

Note 2: The EPA Water Quality Report 2001-2003 considers the specified nitrite level too low for Irish waters.

Note 3: Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations, 1998. S.I. No 258 of 1998.

Note 4: Water Quality (Dangerous substances) Regulations, 2001 S.I. No. 12 of 2001

Note 5: European Communities (Quality of Surface Water intended for the Abstraction of Drinking Water) Regulations, 1989. S.I. No. 294/1989

Having regard to limits of quantification and the extent of the monitoring suite, results for the downstream drinking water works intake indicates that the quality standard for A1 surface water is met the majority of the time (one colour exceedance, Cd and Cr not monitored in 2006 and total P reported rather than phosphates (P₂O₅)). The waste water works does not appear to adversely affect drinking water abstraction at the intake to Cork City Council waterworks to a significant extent.

The Phosphorus Regulations and the Salmonid Regulations are also met downstream of the discharge. Therefore this discharge does not appear to contribute to the pollution at the Lee Estuary/ Lough Mahon sensitive area.

The EPA water quality report 2001 –2003 included Leemount (downstream monitoring point) as a monitoring site for dangerous substances and endocrine disruptors. No exceedance of dangerous substances or endocrine disruption was noted.

The National Parks and Wildlife Service (NPWS) advised Cork Co. Co. that the discharge is not likely to have an effect on the downstream pSPA but may have an accumulative effect with other discharges with regard to persistent bioaccumulating pollutants. The NPWS says *'the discharge concentrations from this WWTP must be assessed as part of the appropriate assessment for Ringaskiddy WWTP and Cork City WWTP'*. As stated above, there are no significant levels of dangerous substances detected in the discharge and no significant industrial discharges. The Recommended Licence (RL) specifies monitoring for relevant metals and organic compounds on an annual basis and requires an appropriate assessment in line with NPWS requirements.

Because the oxidation ditch is oversized, the current BOD reduction is in the order of 98% as it is operated at low F/M ratios (0.04-0.06kgBOD/kgMLSS). The current discharge of 28kg/day BOD does not raise the BOD by more than 0.1mg/l in the receiving water. With additional loadings from planned connections, the plant is likely to operate at design capacity of 24,600PE and consequently the BOD removal rate may be reduced to the more normal rate of 95%. The assimilative capacity of the river is such that BOD discharged at 74kg/day (95% reduction) will not raise the BOD by more than 0.3mg/l in the receiving water (background 1.3mg/l BOD).

Table 2. Assimilative Capacity

Parameter	Concentration mg/l	Discharge load kg/day	Predicted downstream quality	Relevant standard
BOD	5.8 (98%)	28	1.38mg/l	5mg/l ¹
	15 (95%)	74	1.6mg/l	5mg/l ¹
Ortho-P	6.1	29.5	0.03mg/l	0.03mg/l ²

Note 1: European Communities (Quality of Salmonid Waters) Regulations, 1998. S.I. No 293 of 1988.

Note 2: Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations, 1998. S.I. No 258 of 1998.

The RL specifies an ELV for a concentration limit of 25mg/l BOD to allow flexibility but limits the mass load to 74kg/day BOD as any further loading may anticipate an Environmental Impact Assessment process i.e. upgrading of the plant may require an EIS.

Total nitrogen levels in the discharge are less than 15mg/l thus indicating that not only nitrification but denitrification is occurring in the oxidation ditch.

Treatment currently does not include phosphorus removal. The assimilative capacity for ortho-phosphate (based on 50thile flows) indicates that the current discharge brings the receiving water downstream to the Q4 level of 0.03mg/IP. As stated above the Q4 quality status is being maintained downstream. Any further phosphorus loading to the plant will affect the downstream quality rating. Therefore having regard to the combined approach, the RL limits ortho-Phosphorus mass load to the receiving environment. The concentration limit is specified at 10mg/l to allow flexibility and having regard to the limited effect of secondary treatment to remove phosphorus.

It is proposed to install phosphorus removal facilities to achieve a target emission level of 1.5mg/IP. Ferric or aluminium salts will be dosed at the aeration basin. The RL anticipates this development and limits the Total Phosphorus load to 15kg/day which halves the current load to the receiving water but allows the plant to reach its design capacity. The concentration limits for total phosphorus and total nitrogen are specified as annual averages in the RL in accordance with the UWW regulations.

Programme of Improvements

As stated above, the interim improvement works at the WWTP undertaken in 2008 are now complete (observed during site visit). These works involved installing an additional clarifier and storm water storage and were the emergency measures taken in response to Section 63 correspondence by the Agency. The Section 63 notice was issued on foot of complaints and the poor effluent quality in 2007.

The Ballincollig Sewerage Scheme is listed for upgrading and nutrient removal in the Water Services Investment Programme 2007-2009. The upgrading proposal did not form part of the consideration of this application as no information was provided. The nutrient removal proposal is to start in 2008 and be completed by the second quarter of 2013.

The RL provides for the nutrient removal element of the proposed works as it benefits the environment but does not provide for additional capacity. The RL further requires the storm water overflow (SW01) to be upgraded to meet the DoEHLG guidance by the same date (30th June 2013).

Compliance with EU Directives

In considering the application, regard was had for the requirements of Regulation 6(2) of the Waste Water (Discharge) Authorisation, Regulations, 2007 (S.I. No. 684 of 2007) notably;

- Water Framework Directive,
- Dangerous Substances Directive,
- Drinking Water Abstraction Regulations,
- UWW Regulations and
- Birds Directive.

Having regard to the combined approach, the RL limits the discharges from the agglomeration so as to not cause a deterioration in the receiving water.

Compliance

The waste water works is currently in compliance with the UWW Regulations primarily in terms of the numbers of samples taken and compliance with emission limit values.

Submissions

No submissions received in relation to this application.

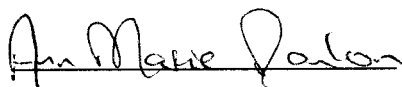
Charges

The RD sets an annual charge for the installation at €7,584.00 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

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



Ann Marie Donlon

Office of Climate, Licensing and Resource Use