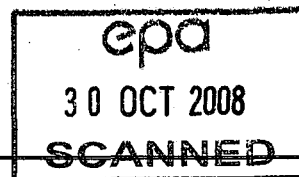


This report has been cleared for
Submission to the Board by Paddy Nolan
Signed: *P. Nolan* Date: *20/10/08*



OFFICE OF CLIMATE,
LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	DIRECTORS
From:	Ann Marie Donlon/Marie O'Connor Environmental Licensing Programme
Date:	15 TH OCTOBER 2008
RE:	Application for a Waste Water Discharge Licence from Cork County Council for the Blarney and Environs Agglomeration, Reg. No. D0043-01

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, 10/10/2008
Site notice check:	03/01/2008
Site visit:	22/09/2008
Submission Received:	None.

1. Agglomeration

This application relates to the Blarney and Environs (environs includes Tower, Cloghroe and Kerry Pike) agglomeration. Waste water is collected in a partially combined foul and separated foul sewage drainage network. Blarney, Tower and Kerry Pike (as of October 2008) waste water is/will be directed to the Blarney WWTP. The Kerry Pike WWTP and discharge will be decommissioned this October, 2008. Cloghroe is currently served by a local package treatment plant but is proposed for connection and forwarding to the Blarney WWTP by March 2012. The network consists of four pumping stations. The diversion of the Cloghroe waste water to the Blarney WWTP will involve the replacement of one pumping station.

The Blarney WWTP is designed for a population equivalent of 13,000 and provides secondary treatment. Waste water arriving at the treatment plant is split (50/50) between two parallel treatment units; a conventional activated sludge system and extended aeration system with anaerobic and anoxic tanks. Phosphorus is removed by biological and chemical means.

An EIS was completed in 2000 for the upgrading and expansion of the treatment plant in two phases; Phase 1: 13,000PE and Phase 2: 19,500PE. Phase 1 development has been completed. Standby pumps, generators and fans are available at the WWTP to ensure continuation of the works.

The existing Cloghroe WWTP is designed for 200PE and is a proprietary package plant. The current load on this plant is estimated as approximately 320PE and is consequently overloaded.

Waste water is a mix of domestic, commercial and industrial and varies seasonally with tourism. The future load from the agglomeration (including consented but not yet constructed development) is reported as 11,443PE. The non-domestic contribution is estimated at 18% of the load. There are no IPPC or Waste licensed activities within the agglomeration.

2. Discharges to Waters

The primary discharge (SW01) from the Blarney WWTP is to the River Shournagh, a tributary of the River Lee. The existing load to the plant is approximately 8,000PE and therefore the plant produces a very good quality effluent as demonstrated in the monitoring results and complies with the quality standards specified and the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001) (UWW regulations). However, insufficient monitoring is taking place.

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 and analysis is undertaken on a composite time-based sample. The discharge pipe is located on the bank of the river.

There is a secondary discharge point (SW04) within the agglomeration from the Cloghroe package plant. This plant is overloaded having only a design capacity of 200PE and a 320PE loading. Although pump capacity protects the package plant from being hydraulically overloaded, the effluent is of poor quality. This secondary discharge is to the River Owennagearah, a tributary of the Shournagh River whose confluence is downstream of SW01.

There are three emergency overflows from the pumping 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).

There are two storm water overflow in the agglomeration. At the head of the Blarney WWTP an overflow weir diverts the excess storm flow (>2.7DWF) to a storm water holding tank (366m³), which overflows to the River Shournagh via the primary discharge pipe. The RL requires an assessment to demonstrate that this storm water overflow satisfies the requirements of the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows, 1995'. There is one other storm water overflow associated with the Cloghroe package plant where excess waste water bypasses the plant. It is proposed to install a storm water holding tank (41m³) at this location. The RL requires this storm water overflow to meet the DoEHLG requirements by March 2012.

3. Receiving waters and Impact

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

Table 1. Receiving waters

Characteristic	Classification	Comment
Receiving water name and type	Shournagh River	Tributary of the River Lee – a designated Salmonid river

Resource use	Drinking water	Lee Road Water Works drinking water abstraction within 10 km downstream
Amenity value	Fishing	
Applicable Regulations	Phosphorus Regulations ¹ Abstraction Regulations ²	Recent improvement, now complies Compliant at intake
EPA monitoring stations	19S010280 Wilson bridge 19S010300 Tower bridge	Upstream 1km Downstream of 1 ^o discharge
Biological quality rating (Q value)	0280 Upstream Q 4 0300 Downstream Q3-4 0300 Downstream Q4	Rated in 2005 Rated in 2005 Rated in 2008
Target Q	Q4	Primary discharge identified as principal source of pollution in 2006 Phosphorus report
WFD status	1a (at risk of not achieving good status) '05	
WFD protected areas	pSPA (4030) River Lee Lee Road Water Works Lee Estuary/ Lough Mahon	Site 20 km downstream. Salmonid water/ water dependant habitat Drinking water <10km downstream Sensitive water <10km downstream

Note 1: Local Government (Water Pollution) Act, 1977 (Water Quality Standards for Phosphorus) Regulations, 1998. S.I. No 258 of 1998.

Note 2: 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 extent of monitoring suite, results for the downstream drinking water works intake (Lee Road) 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)). Therefore the waste water works does not appear to adversely affect drinking water abstraction at the intake to Cork city council waterworks.

The South Western River Basin District have advised (personal communication) that the River Lee is a significant contributor to the Lee Estuary /Lough Mahon nutrient sensitive designation and that 90% is from diffuse sources, primarily agriculture. Consequently the Blarney discharges are not significantly contributing to this sensitive area.

The River Lee is compliant with the Salmonid Regulations and Dangerous substances Regulations. Therefore the waste water works does not appear to adversely affect the River Lee.

Water quality downstream of the primary discharge has improved from Q3-4 in 2005 to Q4 in 2008 and is now compliant with the Phosphorus Regulations. The upgrade of the treatment plant completed in 2007 which includes nutrient removal is likely to be responsible for the improvement. The water quality at Bannow Bridge, just before the confluence of Shournagh and Lee rivers and downstream of both the primary and secondary discharges has a Q rating of 4 (2005 and 2008). This indicates that the poor quality effluent of the Cloghroe package plant is not significantly adversely affecting water quality downstream. The most recent Q ratings (2008) were provided by the Office of Environmental Assessment of the Agency.

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 Blarney WWTP is currently operating below design capacity the discharge quality is very good. The existing BOD load is calculated as 17.5kg/day, which will not raise the BOD in the receiving water, by more than 1mg/l. Table 2 summarises the BOD impact as described in the EIS for the design level of 13,000PE and proposed capacity of 19,500PE (phase 2).

Table 2. Assimilative Capacity

Parameter	PE	Discharge load	Predicted downstream quality	Relevant standard
BOD	13,000 (@20mg/l)	58.75 kg/day	3.12mg/l	5mg/l ¹
BOD	19,500 (@15mg/l)	64.8 kg/day	3.18mg/l	5mg/l ¹
PO ₄ -P	current	4.3 kg/day	0.05mg/l	0.03mg/l ²
Total P	13,000	5.9 kg/day	0.055mg/l	0.03mg/l ²
Total P	19,500	8.6 kg/day	0.064mg/l	0.03mg/l ²

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

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

The BOD load will raise the background BOD level by more than 2 mg/l but remains within the Salmonid quality standard.

The EIS did not consider the effects of phosphorus although the Blarney WWTP incorporates phosphorus removal. The applicant reported difficulties with controlling the phosphorus level in the discharge but that these have now been resolved. The applicant predicted the impact of an orthophosphate load of 4.3kg/day as described in table 2 above. The background level of orthophosphate used in the calculation was 0.035mg/l, which was based on monitoring data but is greater than the quality standard of Q4. Therefore there is zero capacity for phosphorus in the receiving water.

Based on the design levels of treatment (2938m³, 2mg/lP) table 2 above describes the impact (assuming all total phosphorus is orthophosphate) having regard to the same background levels. Although there is no assimilative capacity available, the observed quality downstream showed an improvement in 2008 with a quality rating of Q4. The RL limits phosphorus load to 4.3kg/day and annual average concentration limit of 1.5mg/l Total P. The RL does not provide for the expansion of treatment capacities (to 19,500PE) at this stage as it has not been demonstrated that deterioration in water quality would not result.

The RL specifies ELVs in accordance with the EIS completed in 2000 (BOD, SS) and the current treatment capacity.

The secondary discharge from the Cloghroe package plant is to the River Owennagearagh which is a tributary of Shournagh River. The confluence of the Owennagearagh and Shournagh is downstream of the primary discharge. Although the effluent from this secondary discharge is very poor quality and does not conform to the 25/35 BOD/SS standard, the Q value approximately 5 km downstream at Bannow Bridge is 4. The RD specifies ELV's in line with current loadings but requires the discharge to be discontinued by the 1st April 2012. After that date the discharge point will operate as a storm water overflow only.

Programme of Improvements

As stated above, the Cloghroe area is currently serviced by a package plant and will be connected and serviced by the Blarney WWTP by March 2012. These works are specified to start in 2008 under the Water Services Investment Programme 2007-2009 (WSIP) and RD requires completion and elimination of the secondary discharge by 2012.

Further expansion of the Blarney WWTP to 19,500PE is not mentioned on the WSIP.

The RL requires storm water overflows to meet the DoEHLG guidelines by March 2012 also.

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;

- the Water Framework Directive,
- Dangerous Substances Directive,
- Drinking Water Abstraction Regulations,
- the UWW Regulations and
- the 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 not in compliance with the UWW Regulations primarily due to insufficient sampling.

Submissions

No submissions received in relation to this application.

Charges

The RD sets an annual charge for the installation at €6,254 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