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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: 11 July 2013

RE: Application for a Waste Water Discharge Licence from Cork County Council for the **Carrignavar** agglomeration, **Reg. No. D0517-01.**

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000
Licence application received:	26/01/2010
Notice under Regulation 18(3)(b) issued:	None
Site notice check:	24/02/2010
Site visit:	14/05/2013
Submissions Received:	08/04/2010 (HSE)

1. Agglomeration

This application relates to the Carrignavar agglomeration in County Cork. The agglomeration had a population equivalent (p.e.) of 500 in 2011 and the design capacity of the WWTP is 500 p.e. A projected increase of 20% is used in the mass balance calculations below. The applicant states that no further planning applications will be granted whereby the waste water arising from those applications would discharge to the existing WWTP. There are no identified sources of industrial waste water in the agglomeration.

The current plant consists of a package activated sludge treatment system providing aeration and settlement. There is no chemical dosing for phosphorus removal.

The applicant has proposed to build a new WWTP to consist of primary and secondary treatment and phosphorus removal but no funding is currently available.

2. Discharges to waters

Primary Discharge

The primary discharge (SW-1) is the gravity outfall from the WWTP to the Ballycaskin River, adjacent to the WWTP. At 95%ile flow in the river (0.04 m³/sec), there are approximately 23 dilutions available for the projected normal waste water

discharge (0.001764 m³/sec). The 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's 2012 treated effluent monitoring results are shown in Table 1, along with the WWTP design standards.

Table 1. WWTP monitoring results 2012 (average based on 6 samples)

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg/l)	Orthophosphate (mg/l)
Average effluent	55	142	62	-	-
WWTP Design standards	-	-	-	-	-

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There are no storm water overflows in the agglomeration.

Emergency overflows

There are no emergency overflows in the agglomeration.

3. Receiving waters and impact

The Ballycaskin River 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	Ballycaskin River IE_SW_19_1740	Flows into Glashaboy River, 1.2km downstream
Relevant designations within 10km	None	
Drinking water abstraction within 10 km d/s	None	
EPA monitoring stations & Biological quality rating (Q value)	No stations on Ballycaskin River	
WFD status	Moderate	2009
WFD Risk Category	1a, water body at significant risk of failing objectives	2008
WFD Objective	Restore good status	Exemption until 2021
WFD protected areas	RPA drinking water groundwater	

There is no ambient water quality monitoring data available for Ballycaskin River. Ambient water quality monitoring data for the Glashaboy River, 1.2km downstream, provided by the applicant, based on one sample, indicate that BOD and possibly Orthophosphate and Ammonia levels deteriorate downstream of the primary discharge and 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 below summarises the mass balance calculations which show the contribution from the primary discharge on the receiving water at a projected loading of 600 p.e. (500 p.e. plus 20%). The calculations use the 'notionally clean river' approach (a hypothetically clean stretch of river) provided by the Office of Environmental Assessment.

Table 3. 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	25	1.06	0.25	1.31	≤ 2.6
Orthophosphate (as P)	5 (interim)	0.211	0.005	0.216	≤ 0.075
	1.5 (2019)	0.063		0.068	
Ammonia (as N)	5 (interim)	0.211	0.008	0.219	≤ 0.14
	2 (2019)	0.084		0.092	

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, Orthophosphate as P and Ammonia as N would comply with the good status standards in the Environmental Objectives Regulations 2009, as amended, based on an ELV of 25mg/l BOD, 1.5mg/l Orthophosphate as P and 2mg/l Ammonia as N. However, plant operational improvement or upgrade will be required to meet these ELVs.

The RL proposes an ELV of 25mg/l BOD from date of grant of licence. Average BOD for the discharge was 55mg/l in 2012. Conventional activated sludge plants can achieve 15-25 mg/l BOD.

The RL proposes an interim ELV of 5mg/l Orthophosphate as P and 1.5mg/l Orthophosphate as P from 31st December 2019. Orthophosphate as P was 2.11 mg/l in 2009 (one sample) and there is no chemical dosing for phosphorus removal. Conventional activated sludge plants can achieve 4.5 to 9 mg/l Orthophosphate as P. Plants with chemical dosing for P removal can achieve 1 to 3 mg/l Orthophosphate as P.

The RL proposes an interim ELV of 5mg/l Ammonia as N and 2mg/l Ammonia as N from 31st December 2019. Ammonia as N was 17.5mg/l in 2009 (one sample) and there is no anoxic zone/tank in the WWTP. Conventional activated sludge plants can achieve 2 to 5 mg/l Ammonia.

Carrignavar WWTP is listed as a point pressure in the Glashaboy Water Management Unit Action Plan with 'risks related to insufficient future (2015) assimilative capacity (BOD)'.

4. Site Visit

I visited Carrignavar agglomeration on 14/05/2013 and met with a representative of Cork County Council. I visited the WWTP and observed the primary discharge point and receiving waters.

5. Ambient Monitoring

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

- Upstream: The location identified by Cork County Council is aSW-1u (grid ref. 168359E 081921N) is located on the Glashaboy River and not on the Ballycaskin River.
- Downstream: The location provided by Cork County Council aSW-1d, (grid ref.168259E 080490N) is located on the Glashaboy River and not on the Ballycaskin River.

There are no National monitoring stations located on the Ballycaskin River. Condition 4.19 of the RL requires the licensee to submit a proposal for suitable ambient upstream and downstream monitoring points to the Agency for agreement within three months of date of grant of licence.

6. Programme of Improvements

There are no planned improvements proposed by the applicant for Carrignavar WWTP. Plant operational improvement or upgrade will be required to meet ELVs of 25mg/l BOD, 1.5mg/l Orthophosphate as P and 2mg/l Ammonia as N from 31st 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.
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 present
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]	No shellfish waters present
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 with a European site. AA was not required.
Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Carrignavar WWTP.
Environmental Liability Directive [2004/35/CE]	Condition 7.2 of RL satisfies the requirements of the Directive.

8. Submissions

One valid submission was received in relation to this application from Miriam Cashell, A/Principal Environmental Health Officer, HSE, 08/04/2010.

The submission states that the discharge of waste water to the watercourse must not give rise to a danger to Public Health or lead to contamination of the water table.

Response: The points raised in this submission have been taken into consideration. Schedule A of RL sets ELVs to contribute towards achieving good status water quality standards.

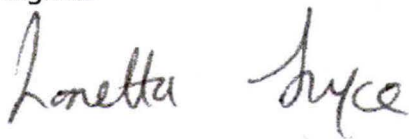
9. Charges

The RL sets an annual charge for the agglomeration at € 4,152.18 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



Loretta Joyce
Inspector
Environmental Licensing Programme

Carrignavar Agglomeration D0517-01

