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 Signed: Maire Buckley Date: 19-10-10
 Maire Buckley



OFFICE OF CLIMATE,
 LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	DIRECTORS		
From:	Pamela McDonnell	Environmental Programme	Licensing
Date:	27th September 2010		
RE:	Application for a Waste Water Discharge Licence from Clare County Council, for the agglomeration named Crusheen, Reg. No. D0424-01		

Application Details

Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000.
Licence application received:	19 June 2009
Notices under Regulation 18(3)(b) issued:	None issued
Notices under Regulation 20(1) issued:	20th April 2010
Regulation 20(1) reply received:	10th May 2010
Site notice check:	17 th July 2009
Site visit:	None
Submission(s) Received:	None received

1. Agglomeration

This application relates to the Crusheen agglomeration. The current population equivalent (PE) of the agglomeration is 713. The Crusheen Wastewater Treatment Plant (WWTP), located at Clondrinagh Estate, Crusheen, Co. Clare, is 14km to the North of Ennis. The plant was constructed between 2000 and 2003 in a joint venture between Clare County Council and a housing developer, and is designed to serve a PE of 1,000. This capacity was designed to serve both the existing houses and proposed development needs for Crusheen. No further improvement works are planned. Domestic wastewater is the main component of the discharge to the Crusheen wastewater treatment plant. There are no commercial or industrial sector discharges to the plant.

The agglomeration consists of a single sewer network and is served by one pumping station (PS). The PS is located at the site of the old Crusheen WWTP, which was downgraded on completion of the new WWTP in Clondrinagh Estate in 2003. The PS consists of a new pre-cast concrete chamber containing two submersible pumps operating on a duty/standby basis. In the event of pump failure an alarm is activated. Any overflow from the PS chamber is diverted to the old primary settlement tank, which provides up to 24hr storage. These overflows are fed back into the network.

Crusheen WWTP provides primary and secondary treatment. The treatment consists of inlet screening, aeration, clarification and sludge removal. Excess settled sludge is removed by tanker to Inagh WWTP for further processing.

There are 2 discharge points from the agglomeration. The primary discharge (SW1) occurs into a land drain located to the east of the WWTP. There is 1 storm water overflow provided at the inlet sump of the plant (SW2), which also discharges into the land drain, just downstream of SW1. There are no secondary discharges from the agglomeration.

2. Discharges to waters

The primary discharge (SW1) occurs into a land drain, which flows in an easterly direction to a larger unnamed stream that flows in a southerly direction to Inchicronan Lough. Treated effluent is discharged through SW1 at a normal rate of approximately 114m³/day. The wastewater is domestic in origin.

Monitoring data for SW1 was submitted to the Agency as part of the application process. This data has been generated as a consequence of the monitoring regimes imposed by the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001). The monitoring undertaken for the purposes of the application process did not indicate that elevated levels of any dangerous substances, as defined in the Dangerous Substances Directive (2006/11/EC), were being discharged. The PE of the agglomeration is below the 2,000PE threshold at which the ELVs specified in Part 1 of the second schedule of the UWWT Regulations apply (25:125:35 BOD:COD:SS). However it is noted that the WWTP generally achieves these limits in the primary discharge. Nutrient levels in the discharge are within a typical range for a treatment plant of this type.

There is 1 storm water overflow discharge point (SW2) in the agglomeration, located at the inlet sump of the plant. This overflow discharges directly to the land drain. The applicant indicates that the overflow operates in compliance with the requirements of the DoEHLG document *Procedures and Criteria for Storm Water Overflows* (DoEHLG, 1995). Condition 4.12 of the RL requires evaluation and upgrading of this overflow to DoEHLG standards, where deemed necessary, and also requires ongoing monitoring of performance of this device.

3. Receiving waters and impact

The receiving waters described below include the land drain into which SW1 and SW2 discharge; the larger unnamed stream into which the land drain flows; Inchicronan Lough; and, the Millbrook River (downstream of Inchicronan Lough). The Millbrook River is included in the catchment of the River Fergus and of the Shannon River Basin.

Table 1.0 Receiving waters

Characteristic	Classification		Comment
Receiving water name and type	Land drain, larger unnamed stream (WFD Segment Code 27_813) and Inchicronan Lough (WFD Code 27-126)		Land drain has not been issued a WFD segment code.
Resource use	None		No drinking water abstraction from surface waters downstream.
Amenity value	General		
Applicable Regulations	Surface Water Regulations ^{Note 1}		Waters upstream and downstream of primary discharge (in Land Drain) comply with these regulations.
Designations	None		
EPA monitoring stations	27MO3 1100 – Ballyline Bridge, Millbrook River		This monitoring point is c. 0.5km downstream of Inchicronan Lough and c. 4 km downstream of primary discharge.
Biological quality rating (Q value)	Q4		Applies to EPA monitoring station on Millbrook River, last rated 2007. No Q value for the unnamed streams directly downstream of discharge.
WFD status	Inchicronan Lough (WFD Code 27-126)	Moderate	Due to moderate nutrient enrichment, moderate physico chemical and moderate ecological status, as per Fergus Water Management Unit Action Plan (WMUAP) from Shannon River Basin Management Plan (2009-2015).
	Millbrook, Tributary of Fergus Waterbody (WFD Code 27-666)	Good	As per Fergus WMUAP from Draft Shannon River Basin Management Plan (2009-2015).
WFD Objective	Inchicronan Lough	Restore by 2015	As per Fergus WMUAP from Draft Shannon River Basin Management Plan (2009-2015).
	Millbrook, Tributary of Fergus Waterbody	Protect	As per Fergus WMUAP from Draft Shannon River Basin Management Plan (2009-2015).
WFD protected areas	None		

Note 1: European Communities Environmental Objectives (Surface Waters) Regulations 2009. S.I. No. 272 of 2009

Receiving water

There are no EPA monitoring stations on the land drain into which the agglomeration initially discharges. The ambient monitoring submitted by the applicant indicates that the water quality in this drain, upstream and downstream of SW1 and SW2, complies with the requirements of the Surface Water Regulations.

This land drain flows into an unnamed stream (1.5km long) which flows to Inchicronan Lough. There is no EPA monitoring data for this stream.

Inchicronan Lough is situated c. 1.5km south of Crusheen village. It is the largest lake (1.17km²) of an area which includes several interconnected lakes and streams. The lake has a mean depth of c. 6.5m. The Fergus Water Management Unit Action Plan (WMUAP) outlines that the Moderate Status assigned to Inchicronan Lough is driven by nutrients, specifically Ammonium. Total phosphorus has not been identified in the report as a particular issue in Inchicronan Lough. OEA state that based on the WFD monitoring for 2007, 2008 and 2009 for this Lake, the indications are that the status of the Lough is still Moderate and ammonia levels remain high.

The Millbrook River, downstream of Inchicronan Lough is the only draining river from the Lough with an EPA monitoring station. The Q value for this river is 4.

None of the receiving waters described above have been identified as nutrient sensitive under the UWWT Regulations

There are no sites designated as Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) or Natural Heritage Areas (NHAs) in the immediate vicinity of Inchicronan Lough or the land drain. It is noted that a designated NHA site is proposed, which includes Inchicronan Lough, Inchicronan Island and the area immediately south of the lake. There are no designated salmonid waters located in the vicinity of the discharge(s). However the main channel of the River Fergus, into which the Millbrook River discharges, (~5.7km downstream of primary discharge) is designated a freshwater Salmonid water.

There are no downstream abstractions of water for potable supplies or for agricultural purposes.

Impact of discharge

Due to the small size of the land drain, and the fact that this stream complies with the Surface Water Regulations downstream of the discharges from the plant, the applicant has assessed the impact of the discharge from the Crusheen WWTP on Inchicronan Lough rather than the land drain. However, a dispersion model was not prepared for the Lough because the applicant contends that based on water quality data, the Lough is not obviously negatively impacted by discharges so can therefore be considered to have sufficient assimilative capacity for current discharges.

The Fergus Water Management Unit Action Plan (WMUAP) does not identify Crusheen WWTP as a point pressure for Inchicronan Lough, which has Moderate status and is affected by nutrient enrichment. Nutrient levels in the primary discharge are characteristic for this type of plant and are not considered to be causing the nutrient problems in the Lough. The Lough is surrounded by agricultural land and the

Fergus WMUAP identifies agriculture as the predominant nutrient source in the Fergus catchment.

The WMUAP does however identify the WWTP as a point pressure on the Millbrook Tributary of Fergus Waterbody, though it is noted that this waterbody has Good Status overall, with an objective to protect. This suggests that the plant is not currently negatively impacting on the Millbrook waterbody, but may pose a threat to its Good status.

In addition, an Appropriate Assessment Screening exercise was carried out by the applicant in accordance with DEHLG Circular L8/08. The conclusion of the screening assessment was that the discharge has “no discernable impact” on protected habitats or species.

Therefore in view of the assessments carried out and the data available, as described above, it is considered that the Crusheen Agglomeration is not a significant concern for the Millbrook Waterbody and Inchicronan Lough.

The action programme for all WWTPs in the overall Fergus catchment, as outlined in the Fergus WMUAP, includes “*upgrades and licensing to be implemented where required.*” The specific measure outlined in the WMUAP for the Crusheen WWTP is to “*implement an appropriate performance management system*”. The plant is relatively new and is well below capacity, so upgrades are not required at this stage. The licence as proposed will facilitate the control of discharges and the protection of the receiving waters.

The PE of the agglomeration is below the 2,000PE threshold at which the ELVs specified in Part 1 of the second schedule of the UWWT Regulations (S.I. No. 254 of 2001) 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 at Crusheen is appropriate.

The monitoring data for the primary discharge indicates that the discharge generally meets the 25:125:35 (BOD:COD:SS) limits set by the UWWT Regulations. Therefore in order to ensure the receiving waters are protected, the relevant WFD objectives are not compromised, and the Surface Water standards continue to be met, these values have been adopted as ELVs in *Schedule A: Discharges* of the RL.

There is no requirement in the Regulations to monitor for Total Nitrogen and Total Phosphorus. As Crusheen WWTP is not identified by the Fergus WMUAP as a key contributor to the nutrient problems in Inchicronan Lough, it is considered that monitoring the nutrient levels in the primary discharge on a monthly basis and monthly ambient monitoring for nutrients upstream and downstream of the primary discharge will sufficiently monitor the contribution the plant may be making towards nutrient levels in the Lough. Following discussions with OEA, it was considered that ambient monitoring is not required in Inchicronan Lough itself, as monitoring is already carried out at this location by the EPA. Condition 4.15 requires the Licensee to annually assess the impact of the discharges from the waste water works on the receiving waters, including Inchicronan Lough. Where the assessment indicates that the discharges are having a deleterious effect on the quality of the receiving waters, the Licensee is required to submit a programme of mitigation measures. In addition, Condition 3.2 requires the Licensee to take such measures as are necessary to ensure that no deterioration in the quality of the receiving waters shall occur as a result of the discharge. In tandem with this, Condition 5.1 requires the applicant to look at ways to maximise the reduction of Total Phosphorus and Ammonia in the WWTP discharge

through a programme of infrastructural improvements, which will be submitted as part of the second AER.

It is noted that the data and assessments described above are relevant to the plant at its current PE of 713. The plant is designed to serve a population of 1000 PE and the RL allows for a discharge of up to 1000 PE. When the plant reaches capacity there will be a 40% increase in loadings from the plant. However this increase represents a conservative scenario in relation to population growth and is only likely to occur gradually over an extended period of time. It is proposed that the ambient monitoring requirements in the RL will ensure that any significant changes in ambient conditions which are attributable to the WWTP discharge are highlighted.

4. Ambient Monitoring

The water quality downstream of the WWTP discharge is similar to that upstream indicating the plant is not affecting water quality. The RL requires monitoring of the receiving water for a range of parameters both upstream and downstream of the primary discharge on a monthly basis. This will highlight any changes in the receiving water quality which may be attributable to the discharge.

5. Combined Approach

The Waste Water Discharge Authorisation Regulations, 2007 (S.I. No. 684 of 2007) 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 (S.I. No. 254 of 2001) 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 S.I. No. 684 of 2007.

6. Programme of Improvements

The current Crusheen WWTP was completed in 2003 and has been designed to accommodate current and proposed developments needs at Crusheen. No further improvements are specified for the Crusheen WWTP and agglomeration at this stage.

8. 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 (S.I. No. 684 of 2007) notably:

Drinking Water Abstraction Regulations

There are no drinking water abstraction points downstream of the discharge.

Sensitive Waters

There are no designated sensitive waters located in the vicinity of the discharge.

Water Framework Directive [2000/60/EC]

The RL, as drafted, transposes the requirements of the Water Framework Directive. 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, S.I. No. 272 of 2009

The receiving waters directly upstream and downstream of the WWTP discharges comply with the Surface Water Regulations. The data available for Inchicronan Lough also indicates that it complies with these Regulations. The ELVs set in the RL should ensure that these waters remain in compliance with the regulations.

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

It should be noted that the PE of the agglomeration is below the 2,000PE threshold at which the ELVs specified in Part 1 of the second schedule of the UWWT Regulations (S.I. No. 254 of 2001) apply. For agglomerations under this threshold, “appropriate treatment” is required as specified in Article 7 of the Regulation. The term appropriate treatment is defined in the Regulations in terms of the level of treatment necessary to protect water quality.

The ELVs specified in the RL are based on the level of treatment necessary to ensure compliance with all relevant water quality standards, as discussed in Section 3 above. The effluent monitoring requirements specified in the RL are based in the requirements for a 1,000PE agglomeration, and therefore comply fully with the requirements of the Directive.

Bathing Water Directive [2006/7/EC]

There are no designated bathing waters located in the vicinity of the discharge.

EC Freshwater Fish Directive [2006/44/EC]

There are no designated salmonid waters located in the vicinity of the discharge(s). It is noted that the main channel of the River Fergus is designated a freshwater Salmonid water (~5.7 km downstream of primary discharge). Due to the assimilative capacity of Inchicronan Lough and Dromore Lough which precedes the River Fergus, and the fact the Millbrook River (upstream of Dromore Lough) has a Q value of 4, then risk to these Salmonid Waters is considered very low.

Dangerous Substances Directive [2006/11/EC]

The applicant has provided sampling results for all of the 19 dangerous substances in the primary discharge for the purposes of the licence application. The measured concentrations are not considered significant.

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

There are no discharges from the Crusheen Agglomeration directly into any site designated under the E.U. Habitats or Birds Directives.

Millbrook River, which is downstream of the Lough, flows through the Dromore Woods and Loughs SAC (Site Code 000032) but as the discharges from the plant should be fully assimilated by the Lough, and as the SAC is 5.5km downstream of the WWTP discharges, it is considered that this SAC will not be adversely impacted by the agglomeration. The Slieve Aughty Mountains SPA (Site Code 0047168) lies approximately 1km to the east of the primary discharge but the receiving waters for the discharge do not flow through this SPA and therefore the discharges from the Crusheen agglomeration are not expected to adversely impact this designated area. It should be noted that the applicant carried out an Appropriate Assessment Screening exercise in accordance with DEHLG Circular L8/08. The conclusion of the screening assessment was that the discharge has “no discernable impact” on protected habitats or species.

It is considered that the RL as drafted will provide a high level of protection to the receiving waters, as it will ensure that all discharges from the agglomeration will be provided with an appropriate level of treatment, as per Condition 3 Discharges. By ensuring that all waste water is treated to a high standard the RL will act to improve the quality of the receiving water environment.

Environmental Liabilities Directive [2004/35/EC]

The RL as drafted, Condition 7.2, satisfies all the requirements of the Environmental Liabilities Directive in particular those requirements outlined in Article 3(1) and Annex III of 2004/35/EC.

9. Cross Office Liaison

Deirdre Tierney (OEA) was consulted in relation to EPA monitoring data for Inchicronan Lough. Deirdre confirmed that based on an initial assessment of the data for 2007, 2008 & 2009, data which has yet to be formally assessed and verified, the water quality in Inchicronan Lough has not significantly changed and is still considered to be of Moderate Status. Deirdre also provided advice with regard to the ambient monitoring requirements in the licence. Rebecca Quinn (OEA) was consulted in relation to hydrometric data for Inchicronan Lough and the Millbrook River. Rebecca confirmed that only the water level of the Lough is recorded by the Hydrometric Unit. No flow data is recorded for the Millbrook River.

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.

10. Site Visit

I had a telephone discussion with Caimin Dillon, Area Engineer with Clare County Council, about the agglomeration and the WWTP. On the basis of the information he provided, and as the plant was built relatively recently, I am satisfied that a site visit to Crusheen WWTP is not necessary.

11. Submissions

No submissions were received in relation to this application.

12. Charges

The RL sets an annual charge for the agglomeration at €2,316 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

13. 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

Pamela McDonnell

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Office of Climate, Licensing and Resource Use

Crusheen Agglomeration D0424-01

