This memo has been approved to go to the Director by the Senior Inspector.
Signed _____ Date: 12/8/13

OFFICE OF CLIMATE, LICENSING & RESOURCE USE.

INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Dara Lynott, Director	
From:	Aoife Loughnane	Environmental Licensing Programme
Date:	12th August 2013	
RE:	Application for a Waste Water Discharge Licence from Clare County Council for the **Corofin** agglomeration, Reg. No. D0434-01.	

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of 500 to 1000
Licence application received:	19/06/2009
Notices under Regulation 18(3)(b) issued:	20/04/2010
Information under Regulation 18(3)(b) received:	16/12/2010
Site notice check:	17/07/2009 (Suzanne Wylde)
Site visit:	13/06/2013
Submissions Received:	Two (Mr. Michael Duffy, Kilfenora, Co. Clare)

1. Agglomeration

This application relates to the Corofin agglomeration in County Clare. The agglomeration had a population equivalent (p.e.) of 500 in 2011. This figure represents the winter loading. Clare County Council has identified that the summer loading can increase to 878 p.e. due to tourism. They have not identified the projected p.e. for the year 2019. A 20% increase of the summer load to 1,054 p.e. by 2019 is used for the purposes of this assessment. There are no identified sources of industrial waste water in the agglomeration.

A new waste water treatment plant (WWTP) was commissioned in Corofin in June 2010, at a design capacity of 1,725 p.e for a 20 year design horizon. The WWTP is operated by EPS Ireland Ltd. on behalf of Clare County Council. The plant consists of inlet screen, storm water holding tank, two sequencing batch reactors (SBRs) and a sludge holding tank. There is a system of chemical dosing for phosphorus removal at the plant, however it is not currently used.

2. Discharges to waters

Primary Discharge

The primary discharge (SW001) is the outfall from the WWTP to the River Fergus, adjacent to the WWTP. At 95%ile flow in the river (0.313 m^3/sec), there are approximately 114 dilutions available for the projected normal waste water discharge of 237 m^3/day (calculated based on a waste water loading of 225 litres per person per

day from 1,054 p.e.). The 95%ile river flow was provided by the Office of Environmental Assessment. The applicant's treated effluent monitoring results for 2011 and 2012 are shown in Table 1, along with the WWTP design standards. The results show that the WWTP performs to an extremely high standard.

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

Parameter	BOD (mg/l)	COD (mg/l)	Suspended solids (mg/l)	Ammonia (mg/l as N)	Total Phosphorus (mg/l as P)
Average effluent 2011	1	22	2.2	0.36	0.15
Average effluent 2012	3.6	40	12.3	0.12	0.5
WWTP Design standards	25	125	35	5	2

Secondary Discharges

There are no secondary waste water discharges from the agglomeration.

Storm water overflows

There is one storm water overflow (SWO) from the storm water holding tank at the WWTP which discharges to the River Fergus immediately adjacent to the primary discharge point. An old SWO at Corofin Bridge (200m u/s of the primary discharge) was decommissioned upon completion of the new WWTP in June 2010. Condition 4 of the RL requires the SWO to comply with DoECLG criteria for SWOs.

Emergency overflows

There are no pumping stations or emergency overflows in the agglomeration.

3. Receiving waters and impact

The receiving water is the River Fergus which is located in the Shannon International 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	River Fergus IE_SH_27_1122	Enters Atedaun Lough approx. 500m d/s of SW001.
Relevant designations within 10km	Salmonid river, East Burren Complex SAC (001926), Corofin Wetlands SPA (004220).	River Fergus – main channel. SW001 discharges directly into the SAC & SPA
Drinking water abstraction downstream	Drumcliff Springs (Ennis public water supply)	Located 20km d/s of SW001. Karst features and underground drainage affect flows in the River Fergus.
EPA monitoring stations & Biological quality rating (Q value)	RS27F010300 located 200m u/s RS27F010400 located 9.4km d/s	Upstream Q3-4 in 2010 Downstream Q4 in 2010
WFD status	Poor	2011
WFD Risk Category	1a – at risk	
WFD Objective	Restore good status by 2021	Fergus Water Management Unit Action Plan

WFD protected areas	RPA salmonid waters	River Fergus
	RPA drinking water lake	Atedaun Lough
	RPA drinking water groundater	Ennis groundwater body

Ambient water quality monitoring data for the River Fergus provided by the Local Authority in accordance with the Water Framework Directive is summarised in Table 3 below. The results show that BOD, orthophosphate and ammonia levels upstream and downstream of the primary discharge comply with the good status water quality standards in the Environmental Objectives Regulations 2009, as amended.

Table 3. Water Quality in River Fergus in 2012 (average based on 11 samples)

Parameter (mg/l)	Bridge in Corofin RS27F010300 200 m u/s of SW001	Addroon Bridge RS27F010400 9.4 km d/s of SW001	Water Quality Standards Note 1
BOD	1	1.09	≤ 1.5 mg/l (mean)
Orthophosphate (as P)	0.02	0.01	≤ 0.035 mg/l (mean)
Ammonia (as N)	0.04	0.04	≤ 0.065 mg/l (mean)

Note 1: Good status under the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended.

Table 4 below summarises the mass balance calculations which show the impact of the primary discharge on the receiving water at the projected waste water loading of 237 m^3/day. The calculations use the 'notionally clean river' approach (a hypothetically clean stretch of river) provided by the Office of Environmental Assessment.

Table 4. 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	0.22	0.26	0.48	≤ 2.6
Orthophosphate (as P)	2	0.017	0.005	0.022	≤ 0.075
Ammonia (as N)	5	0.043	0.008	0.051	≤ 0.14

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 and ammonia will comply with the good status standards in the Environmental Objectives Regulations 2009, as amended, when the proposed emission limits of 25 mg/l BOD, 2 mg/l orthophosphate (as P) and 5 mg/l ammonia (as N) are applied. These ELVs are considered achievable based on the existing WWTP design standards and performance.

4. Site Visit

I visited the Corofin agglomeration on 13th June 2013 and met with representatives of Clare County Council. A full tour of the WWTP was conducted, including the location of the primary discharge into the River Fergus.

5. Ambient Monitoring

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

- Upstream: The location identified by Clare County Council is aSW-1u (grid ref. 128843E, 188573N) approximately 30 m upstream of SW001. However, there is an EPA monitoring station (EDEN code RS27F010300) located 200 m upstream and this has been included in the RL.
- Downstream: It is not possible to specify a safe and accessible downstream monitoring location on the river prior to Atedaun Lough, therefore Clare County Council has agreed to use the national monitoring station at Ballyogan Bridge (EDEN Code RS27F010350), located approximately 5.5km downstream of SW001.

6. Programme of Improvements

There are no planned improvements proposed by the applicant and the RL does not require any improvements at Corofin WWTP.

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 5. Compliance with EU Directives / Regulations

Compliance with Directives/Regulations	Description and Conditions in RL
Urban Waste Water Treatment Directive [91/271/EEC]	Corofin WWTP provides 'appropriate treatment'
Water Framework Directive [2000/60/EC]	Good status to be achieved by 2021
EC Environmental Objectives (Surface Water) Regulations 2009 (S.I. No. 272 of 2009), as amended	Schedule A of RL sets ELVs to contribute towards achieving good status water quality standards
Drinking Water Abstraction Regulations	Condition 4 requires risk assessment for the protection of d/s abstraction points.
EC Freshwater Fish Directive [2006/44/EC]	Schedule A sets ELVs which take account of salmonid designation (including a more stringent limit on suspended solids).
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 nature and scale of the discharges and the results of ambient water quality monitoring which show no deterioration in the River Fergus downstream of Corofin

	WWTP. AA was not required.
Environmental Impact Assessment Directive [85/337/EEC]	An EIS was not required for Corofin WWTP.
Environmental Liability Directive	Condition 7.2 of RL

8. Submissions

Two submissions were received in relation to this application from Mr. Michael Duffy, 1 Clos Na hEaglaise, Kilfenora, Co. Clare, on 15th July 2009 and 30th November 2009. Mr. Duffy outlined a number of concerns in relation to Corofin WWTP and the receiving waters.

(i) The first submission is a copy of a letter which Mr. Duffy sent to the County Manager, Clare County Council, regarding water quality issues in the county and in particular, effluent discharges from Kilfenora, Corofin and Ruan WWTPs. Mr. Duffy wishes to make a formal complaint to Clare County Council, the EPA and the DoECLG about the discharge of effluent to surface waters at Corofin, without a discharge licence.

(ii) Following Mr. Duffy's request to Clare County Council under the AIE Regulations for information regarding the flow volumes at Corofin WWTP, the council's response of 29th June 2009 stated that they did not have flow recorders in place. Therefore, Mr. Duffy queries the flow figures supplied in attached C.2.1 of the WWDL application.

(iii) Weather events in November 2009 caused serious flooding in the area. Mr. Duffy suggested a review of the construction levels for new WWTP as the current WWTP was at an early stage of construction at that time. He states that if water levels rise higher in the future, the new WWTP could be flooded.

(iv) In the WWDL application, Clare County Council made no reference to the fact that the receiving waters form part of the catchment for the potable water source at Ennis (Drumcliff Springs). As this is a karst limestone area, Mr. Duffy believes that the zone of contribution for the springs is regional.

Response: The points raised in these submissions have been taken into consideration. It is noted that these submissions were received in 2009 prior to the new WWTP being commissioned in June 2010.

Schedule A of RL sets ELVs to contribute towards achieving good water quality status in the River Fergus by 2021. The mass balance calculations presented in Table 4 of this report demonstrate that the predicted downstream water quality will comply with good status at the specified ELVs.

As shown in Table 3 of this report, the 2012 ambient monitoring results show that water quality upstream and downstream of the primary discharge complies with the good status water quality standards in the Environmental Objectives Regulations 2009, as amended.

To address the specific concerns raised by Mr. Duffy:

(i) Clare County Council complied with the requirements of the Waste Water Discharge (Authorisation) Regulations 2007, as amended, by lodging a WWDL application with the Agency for the Corofin agglomeration by 22nd

June 2009, which was the prescribed date for discharges from agglomerations with a population equivalent of 500 to 1,000.

(ii) Clare County Council withdrew section C.2.1 of their WWDL application in December 2009, stating that it was submitted in error and the details did not relate to Corofin WWTP. Updated flow and monitoring data for Corofin WWTP was submitted in the Regulation 18(3)(b) response received in December 2010.

During my site visit on 13th June, Clare County Council confirmed that a flow meter and composite samplers (influent and effluent) are now in place at Corofin WWTP.

(iii) The issue of flood protection is outside the remit of waste water discharge licensing.

(iv) Drumcliff Springs are two adjacent springs that supply the Ennis public water supply scheme. The springs are located 10km south-east of Corofin, and 20 km d/s of SW001 following the path of the River Fergus. The average abstraction rate is 12,000 m^3/day. The springs are situated in a regionally important karstified aquifer (Rkc) / Dinantian Pure Bedded Limestone. The GSI have prepared a source protection report for this water supply and the zone of contribution has been delineated based on tracing, geology and topography. Corofin is located within the zone of contribution for this water supply. Condition 4 of the RL requires the licensee to prepare a risk assessment for the protection of downstream drinking water abstraction points, from the waste water discharges at Corofin.

9. Charges

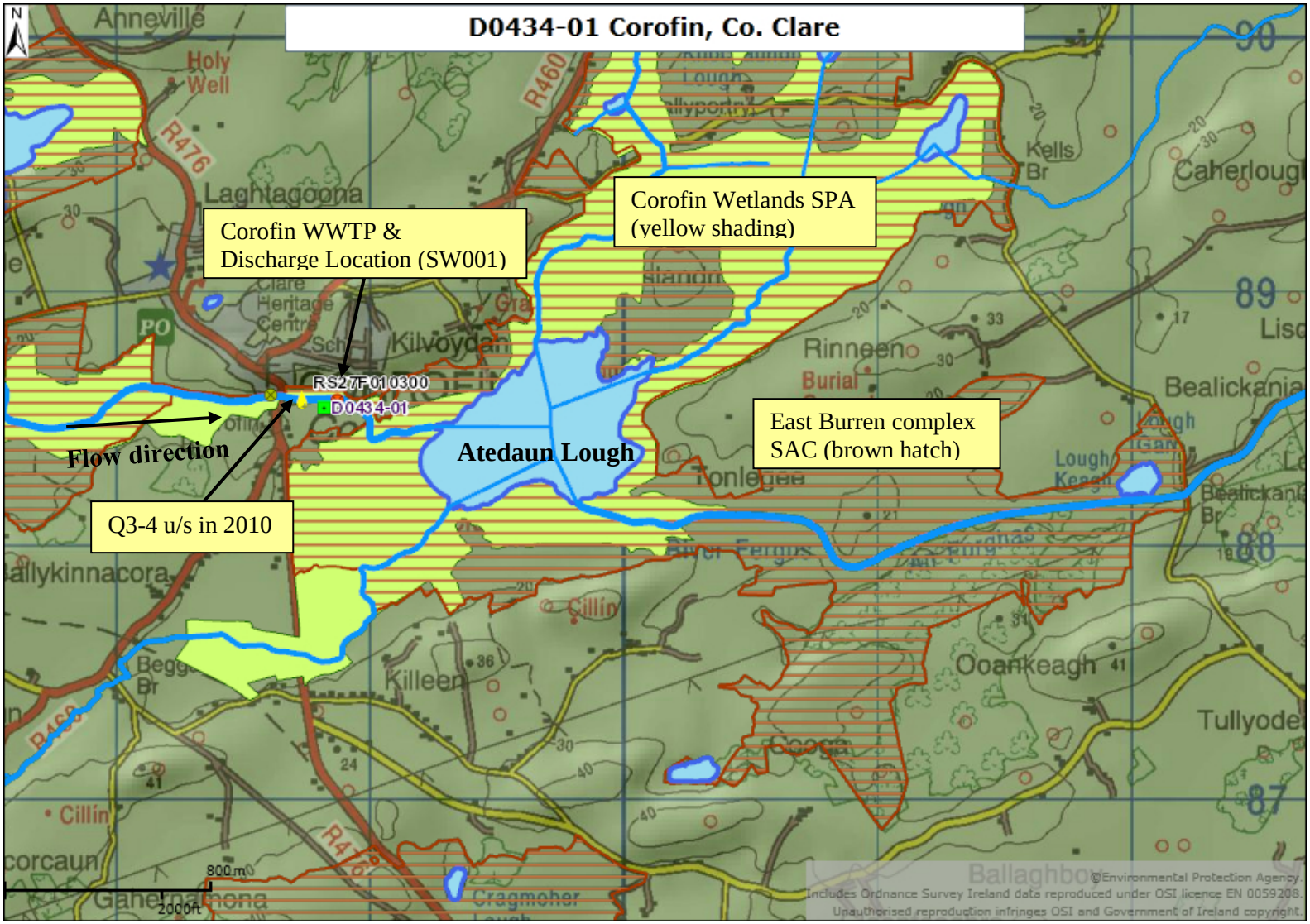
The RL sets an annual charge for the agglomeration at €4,152.18 and is reflective of the monitoring and enforcement regime being proposed for the agglomeration.

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

Aoife Loughnane
Inspector
Environmental Licensing Programme


D0434-01 Corofin, Co. Clare
Corofin WWTP & Discharge Location (SW001)
Corofin Wetlands SPA (yellow shading)
East Burren complex SAC (brown hatch)
Atedaun Lough
Flow direction
Q3-4 u/s in 2010
RS27F010300
D0434-01
Anneville
Holy Well
R476
R460
Laghtagoona
Kilvoydan
Rinneen
Burial
Bealickania
Kells Br
Caherlough
Tonlegee
Lough Keagh
Ballykinnacora
Killeen
Ooankeagh
Tullyodea
Cragmoher
Gaheramona
800m
2000ft
©Environmental Protection Agency.
Includes Ordnance Survey Ireland data reproduced under OSI licence EN 0059208.
Unauthorised reproduction infringes OSI and Government of Ireland copyright.