# Comhairle Contae Chorcaí Cork County Council

Environmental Protection Agency,
Office of Climate change and resource Unit,
Licensing Unit,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

19<sup>th</sup> June 2009

Annabella, Mallow,

Co. Cork.

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Environmental Protection Agency 2.7 JUN 2009



Re: Waste Water Discharge Licence Application for the Agglomeration of Ballyhooley

Dear Sir / Madam,

Please find enclosed Cork County Council's Waste Water Discharge Licence Application for the agglomeration of Ballyhooley

The following documentation is enclosed:

- 1 Nr. signed original in hardcopy
- 1 Nr. copy in hardcopy
- 2 Nr. CD-ROM with all documentation in electronic searchable PDF
- 1 Nr. CD-ROM with AutoCAD, Excel Data, Table D.2 and Table E.3

The content of the electronic files is a true copy of the original hardcopy.

Payment of €10,000 Licence Fee is by Electronic means.

Signed:

Frank Cronin

Senior Engineer - Water Services

This is a draft document and is subject to revision.



# Waste Water Discharge Licence Application Form

EPA Ref. Nº:

#### **Environmental Protection Agency**

PO Box 3000, Johnstown Castle Estate, Co. Wexford Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699

Web: www.epa.ie Email: info@epa.ie



### **Tracking Amendments to Draft Application Form**

Version No.	Date	Amendment since previous version	Reason
V. 1.	11/10/07	N/A	
V. 2.	18/10/07	Inclusion of a Note 1 superscript for Orthophosphate in Tables D.1(i)(b) & D.1(ii)(b).	To highlight the requirement for filtered samples in measurement of O-Phosphate for waste water discharges.
V.3.	13/11/07	Amend wording of Section F.2 to include 'abstraction'.	To accurately reflect the information required
		Amend wording of Checklist in Annex to reflect wording of Regulation 16(5) of S.I. No. 684 of 2007.	To accurately reflect the Regulations and to obtain the application occumentation in appropriate format.
		Inclusion of unique point code for each point of discharge and storm water overflow.	To aid in cross-referencing of application documentation.
V.4	18/04/08	Inclusion of requirement to provide of name of agglomeration to which the application relates.	To accurately determine the agglomeration to be licensed.
		Amend wording of Section B.7. (iii) to reflect the title of Water Services Authority.	To accurately reflect the Water Services Act, 2007.
		Addition of new Section B.9 (ii) in order to obtain information on developments yet to contribute to the waste	To obtain accurate population equivalent figures for the agglomeration.
		water works.	To obtain accurate information on design and
		Addition of sub-sections C.1.1 & C.1.2 in order to clarify information required for Storm water overflow and pumping stations	spill frequency from these structures.
		within the works.  Amend Section D.1 to include a requirement for monitoring data for influent	To acquire information on the population loading onto the plant and to provide information on performance rates within

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# Waste Water Discharge Authorisation Application Form

		to waste water treatment plants, where available. Amend wording of Section E.1 to request information on composite sampling/flow monitoring provisions.	the plant. To acquire accurate information on the sampling and monitoring provisions for discharges from the works.
V.5	07/07/2008	Amend wording of B.7 (iii) to include reference to Water Services Authorities.  Amend Section G.1 to include Shellfish Waters Directive.	To accurately reflect the Water Services Act, 2007 requirements.
V.6	26/08/2007	Amendments to Section D to reflect new web based reporting.  Amended requirements for	
		reporting on discharges under E.1 Waste Water Discharge Frequency and Quantities.	nge.
		Amendment to Section F.1 to specify the type of monitoring and reporting required for the background environment.	requirements for ambient monitoring.
		Removal of Annexes to application form.	To reflect the new web based reporting requirements.

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# Environmental Protection Agency Application for a Waste Water Discharge Licence Waste Water Discharge (Authorisation) Regulations 2007.

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**ANNEX 1: TABLES/ATTACHMENTS** 

**ANNEX 2: CHECKLIST** 



#### ABOUT THIS APPLICATION FORM

This form is for the purpose of making an application for a Waste Water Discharge Licence under the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007) or for the review of an existing Waste Water Discharge licence.

The Application Form **must** be completed in accordance with the instructions and guidance provided in the Waste Water Discharge Licensing Application Guidance Note. The Guidance Note gives an overview of Waste Water Licensing, outlines the licence application process (including the number of copies required) and specifies the information to be submitted as part of the application. The Guidance Note and application form are available to download from the Licensing page of the EPA's website at www.epa.ie.

A valid application for a Waste Water Discharge Licence must contain the information prescribed in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007). Regulation 16 of the Regulations sets out the statutory requirements for information to accompany a licence application. The application form is designed in such a way as to set out these questions in a structured manner and not necessarily in the order presented in the Regulations. In order to ensure a legally valid application in respect of Regulation 16 requirements, please complete the Regulation 16 Checklist provided in Annex 2.

This Application Form does not purport to be should not be considered a legal interpretation of the provisions and requirements of the Waste Water Discharge (Authorisation) Regulations, 2007 While every effort has been made to ensure the accuracy of the material contained in the Application Form, the EPA assumes no responsibility and gives no quarantee, or warranty concerning the accuracy, completeness or up to date nature of the information provided herein and does not accept any liability whatsoever arising from any errors or omissions.

Should there be any contradiction between the information requirements set out in the Application Form and any clarifying explanation contained in the accompanying Guidance Note, then the requirements in this Application Form shall take precedence.

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#### **PROCEDURES**

The procedure for making and processing of applications for waste water discharge licences, and for the processing of reviews of such licences, appear in the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007) and is summarised below. The application fees that shall accompany an application are listed in the Third Schedule to the Regulations.

Prior to submitting an application the applicant must publish in a newspaper circulating in the area, and erect at the point nearest to the waste water treatment plant concerned or, if no such plant exists, at a location nearest the primary discharge point, a notice of intention to apply. An applicant, not being the local authority in whose functional area the relevant waste water discharge, or discharges, to which the relevant application relates, takes place or is to take place, must also notify the relevant Local Authority, in writing, of their intention to apply.

An application for a licence must be submitted on the appropriate form (available from the Agency) with the correct fee, and should contain relevant supporting documentation as attachments. The application should be based on responses to the form and include supporting written text and the appropriate use of tables and drawings. Where point source emissions occur, a system of unique reference numbers should be used to denote each discharge point. These should be simple, logical, and traceable throughout the application.

The application form is divided into a number of sections of related information. The purpose of these divisions is to facilitate both the applicant and the Agency in the provision of the information and its assessment. Please adhere to the format as set out in the application form and clearly number each section and associated attachment, if applicable, accordingly. Attachments should be clearly numbered, titled and paginated and must contain the required information as set out in the application form. Additional attachments may be included to supply any further information supporting the application. Any references made should be supported by a bibliography.

All questions should be answered. Where information is requested in the application form, which is not relevant to the particular application, the words "not applicable" should be clearly written on the form. The abbreviation "N/A" should not be used.

Additional information may need to be submitted beyond that which is explicitly requested on this form. Any references made should be supported by a bibliography. The Agency may request further information if it considers that its provision is material to the assessment of the application. Advice should be sought from the Agency where there is doubt about the type of information required or the level of detail.

Information supplied in this application, including supporting documentation will be put on public display and be open to inspection by any person.

Applicants should be aware that a contravention of the conditions of a waste water discharge licence is an offence under the Waste Water Discharge (Authorisation) Regulations, 2007.

The provision of information in an application for a waste water discharge licence which is false or misleading is an offence under Regulation 35 of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

Note: <u>Drawings</u>. The following guidelines are included to assist applicants:

- All drawings submitted should be titled and dated.
- All drawings should have a <u>unique reference number</u> and should be signed by a clearly identifiable person.
- All drawings should indicate a scale and the <u>direction of north</u>.
- All drawings should, generally, be to a scale of between 1:20 to 1:500, depending upon the degree of detail needed to be shown and the size of the facility. Drawings delineating the boundary can be to a smaller scale of between 1:1000 to 1:10560, but must clearly and accurately present the required level of detail. Drawings showing the waste water treatment plant location, if such a plant exists, can be to a scale of between 1:50 000 to 1:126 720. All drawings should, however, be A3 or less and of an appropriate scale such that they are clearly legible. Provide legends on all drawings and maps as appropriate.
- In exceptional circumstances, where A3 is considered inadequate, a larger size may be requested by the Agency.

It should be noted that it will not be possible to process or determine the application until the required documents have been provided in sufficient detail and to a satisfactory standard.

#### SECTION A: NON-TECHNICAL SUMMARY

Advice on completing this section is provided in the accompanying Guidance Note.

A non-technical summary of the application is to be included here. The summary should identify all environmental impacts of significance associated with the discharge of waste water associated with the waste water works. This description should also indicate the hours during which the waste water works is supervised or manned and days per week of this supervision.

The following information must be included in the non-technical summary:

#### A description of:

- the waste water works and the activities carried out therein,
- the sources of emissions from the waste water works,
- the nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment,
- the proposed technology and other techniques for preventing or, where this
  is not possible, reducing emissions from the waste water works,
- further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused;
- measures planned to monitor emissions into the environment.

Supporting information should form Attachment Nº A.1

#### SECTION A: NON-TECHNICAL SUMMARY

Ballyhooley is situated along the national Primary Route, N72, between the towns of Fermoy and Mallow. The village is bounded to the south by the River Blackwater and to the extreme north by the disused Fermoy Mallow Railway line.

#### The Waste Water Works and the Activities Carried Out Therein

The wastewater in Ballyhooley is collected in a partially combined foul and separate foul sewerage drainage network. The wastewater from the village gravitates to the wastewater treatment plant.

Ballyhooley WWTP is designed for a Population Equivalent (PE) of 750, which was commissioned in 2006. Activated Sludge is the process employed at the Ballyhooley waste water treatment plant. Influent initially gravitates into the inlet works, consisting of a automatic and manual bypass. Following the screening of the raw sewerage, influent a circular concrete inlet sump, from where the effluent is pumped to 2 Nr steel CAS Tanks. The CAS Tanks consists of a aeration zone followed by a settlement chamber. The solids settle while the supernatant flows over the weir and discharges to the river. Sludge may be returned from the settling tank to the aeration tank and excess sludge is removed from the settling tank as required and removed off site for disposal.

In the event of high storm flows effluent overflow from the inlet sump to the storm holding tank. During normal storm periods, effluent overflows at the sump to the storm holding tank, which gravities back to the sump after the sump level reduces. In the event of the storm tank fill the screened effluent discharges via the outlet pipe.

Currently the WWTP is receiving flows ranging from 120m<sup>3</sup>/d to 500m<sup>3</sup>/d, with an average DWF of 120m<sup>3</sup>/d entering the plant. Based average hydraulic load of 220l/d/p, the PE equates to 545.

Ballyhooley WWTP is operated by Cork County Council. The plant is operated by a caretaker who duties also involves the maintenance of a number of other small WWTP's in the area. The caretaker is on duty from 8.00am to 5.30pm Monday – Saturday.

#### The sources of emissions from the waste water works

The pollution load for the Ballyhooley agglomeration arises from the following areas:

- Domestic population
- Commercial premises
- School & crèches
- Infiltration

The sewerage from all commercial premises is collected via the public sewer and treated in conjunction with the domestic waste at the WWTP.

Currently the WWTP is receiving flows ranging from 120m<sup>3</sup>/d to 500m<sup>3</sup>/d, with an average DWF of 120m<sup>3</sup>/d entering the plant

The nature and quantities of foreseeable emissions from the waste water works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment

The final effluent is discharged to the Blackwater River, which is adjacent to the wastewater treatment plant site. The maximum flow to the existing WWTP is in the order of  $120 \, \text{m}^3 / \text{d}$  to  $500 \, \text{m}^3 / \text{d}$ .

The proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works

#### Technology

The WWTP has a sufficient number of standby pumps, automatic sample facilities, etc is provided to ensure continuation of the wastewater treatment.

The treatment works consists of the following elements:

- Inlet Works
- Forward Feed Sump
- Aeration Tank CAS Tank
- Settling Tank CAS Tank
- Storm Tank
- Sludge Holing Tank
- RAS/WAS Chamber
- Outfall to Blackwater River

#### **Techniques**

The new WWTP shall be operated and managed in accordance with the Performance Management System, developed by the Water Service National Training Group (WSMTG).

Further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused

A complete new WWTP was recently commissioned for the village, which replaced an old septic tank. In addition to the commissioning of the new WWTP, the collection system for the village was also examined with a regard to reducing the infiltration of surface/storm water into the sewerage network.

Currently there are no further works envisaged to be undertaken on Ballyhooley WWTP in the near future.

#### Measures planned to monitor emissions into the environment

The Cork County Council Environmental Laboratory carries out sampling of the influent and effluent biannually. Sampling, Monitoring and analysis of the wastewater sludge is also undertaken by the Environmental Laboratory.

The Cork County Council Environmental Department located in Mallow takes samples from the River Bride upstream and downstream of the wastewater treatment plant approximately 2 times per year. Samples of the influent and effluent are also taken at these times.

The new wastewater treatment plant is equipped with automatic samplers on the inlet and outlet lines. The EU Water Framework Directive Monitoring Programme is to be fully operational by the year 2012. This monitoring programme was prepared by the EPA to meet the requirements of the EU Water Framework Directive (2000/60/EC) and National Regulations implementing the Water Framework Directive (S.I. No. 722 of 2003) and National Regulations implementing the Nitrates Directive (S.I. No. 788 of 2005).

#### List of Attachments include the following:

Location Map Scale 1:50,000

 Site Location Map of WWTP
 Site Layout

 Attachment A1 Map 1

 Attachment A1 Map 2
 Attachment A1 Map 3

Consent of copyright owner required for any other use.

#### **SECTION B: GENERAL**

Advice on completing this section is provided in the accompanying Guidance Note.

#### **B.1** Agglomeration Details

Name of Agglomeration:	Ballyhooley & Environs
------------------------	------------------------

#### **Applicant's Details**

#### Name and Address for Correspondence

Only application documentation submitted by the applicant and by the nominated person will be deemed to have come from the applicant.

Provide a drawing detailing the agglomeration to which the licence application relates. It should have the boundary of the agglomeration to which the licence application relates <u>clearly marked in red ink</u>.

Name*:	Cork County Council
Address:	Northern Division
	Annabella
	Mallow
	Co. Cork
Tel:	022 21123
Fax:	022 21983 aff <sup>0</sup> aff <sup>0</sup>
e-mail:	Frank.cronin@corkcoco.je

<sup>\*</sup>This should be the name of the water services authority in whose ownership or control the waste water works is vested.

<sup>\*</sup>Where an application is being submitted on behalf of more than one water services authority the details provided in Section B.1 shall be that of the lead water services authority.

Name*:	Frank Cronin
Address:	Northern Division
	Annabella
	Mallow
	Co. Cork
Tel:	022 21123
Fax:	022 21983
e-mail:	Frank.cronin@corkcoco.ie

<sup>\*</sup>This should be the name of person nominated by the water services authority for the purposes of the application.

#### **Co-Applicant's Details**

Name*:	Not Applicable
Address:	Not Applicable
Tel:	Not Applicable
Fax:	Not Applicable
e-mail:	Not Applicable

<sup>\*</sup>This should be the name of a water services authority, other than the lead authority, where multiple authorities are the subject of a waste water discharge (authorisation) licence application.

#### **Design, Build & Operate Contractor Details**

Name*:	Not Applicable
Address:	Not Applicable
Tel:	Not Applicable
Fax:	Not Applicable
e-mail:	Not Applicable

<sup>\*</sup>Where a design, build & operate contract is in place for the waste water works, or any part thereof, the details of the contractor should be provided.

**Attachment B.1** should contain appropriately scaled drawings / maps (≤A3) of the agglomeration served by the waste water works showing the boundary clearly marked in red ink. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g., ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. These drawings should be provided to the Agency on a separate CD-Rom containing sections B.2, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No
	other V	

#### **B.2** Location of Associated Waste Water Treatment Plant(s)

Give the location of the waste water treatment plant associated with the waste water works, if such a plant or plants exists.

Flan Groarke
Cork County Council
Conva, Ballyhooley
Fermoy
Co. Cork 💞
E172668 N099051
Secondary
025-31947
025-32331
Flannan.groarke@corkcoco.ie

<sup>\*</sup>This should be the name of the person responsible for the supervision of the waste water treatment plant.

**Attachment B.2** should contain appropriately scaled drawings / maps (≤A3) of the site boundary and overall site plan, including labelled discharge, monitoring and sampling points. These drawings / maps should also be provided as georeferenced digital drawing files (e.g., ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. These drawings should be provided to the Agency on a separate CD-Rom containing sections B.1, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No
	1	

#### **B.3** Location of Primary Discharge Point

Give the location of the primary discharge point, as defined in the Waste Water Discharge (Authorisation) Regulation, associated with the waste water works.

Type of	225mm diameter outfall pipe from wastewater treatment plant. Open
Discharge	pipe
Unique	SW - 01 BALY
Point Code	
Location	WWTP site Conva, Ballyhooley
Grid ref	172596E 099026N
(6E, 6N)	

**Attachment B.3** should contain appropriately scaled drawings / maps (≤A3) of the discharge point, including labelled monitoring and sampling points associated with the discharge point. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing the drawings and tabular data requested in sections B.1, B.2, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	Me Yes	No
and the same of th	any or V	

#### B.4 Location of Secondary Discharge Point(s)

Give the location of **all** secondary discharge point(s) associated with the waste water works. Please refer to Guidance Note for information on Secondary discharge points.

	$\Delta$
Type of	Not Applicables
Discharge	antice and the second s
Unique	Not Applicable
<b>Point Code</b>	
Location	Not Applicable
Grid ref	Not Applicable
(6E, 6N)	

**Attachment B.4** should contain appropriately scaled drawings / maps (≤A3) of the discharge point(s), including labelled monitoring and sampling points associated with the discharge point(s). These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.5, C.1, D.2, E.3 and F.2.

Attachment included	Yes	No
		<b>V</b>

#### **B.5** Location of Storm Water Overflow Point(s)

Give the location of **all** storm water overflow point(s) associated with the waste water works.

Type of	Not Applicable
Discharge	
Unique	Not Applicable
Point Code	
Location	Not Applicable
Grid ref	Not Applicable
(6E, 6N)	

**Attachment B.5** should contain appropriately scaled drawings / maps (≤A3) of storm water overflow point(s) associated with the waste water works, including labelled monitoring and sampling points associated with the discharge point(s). These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, C.1, D.2, E.3 and F.2.

Attachment included	only and Yes	No
	atto ses difedite	1

#### **B.6 Planning Authority**

Give the name of the planning authority, or authorities, in whose functional area the discharge or discharges take place or are proposed to take place.

Name:	Cork County Council
Address:	Planning Department
	County Hall
	Carriagrohane Road
	Cork
Tel:	021 4276891
Fax:	021 4867007
e-mail:	Planninginfo@corkcoc.ie

Planning Permission relating to the waste water works which is the subject of this application:- (tick as appropriate)

has been obtained	$\sqrt{}$	is being processed	
is not yet applied for		is not required	

Local Authority Planning File Reference №:	Not Applicable

**Attachment B.6** should contain **the most recent** planning permission, including a copy of **all** conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS, should also be enclosed.

Where planning permission is not required for the development, provide reasons, relevant correspondence, etc.

Attachment included	Yes	No
	1	

#### **B.7** Other Authorities

#### B.7 (i) Shannon Free Airport Development Company (SFADCo.) area

The applicant should tick the appropriate box below to identify whether the discharge or discharges are located within the Shannon Free Airport Development Company (SFADCo.) area.

**Attachment B.7(i)** should contain details of any or all discharges located within the SFADCo. area.

Within the SFADCo Area	Yes	No
		1

B.7 (ii) Health Services Executive Region

The applicant should indicate the **Health Services Executive Region** where the discharge or discharges are or will be located.

Name:	Health Service Executive
Address:	North Cork Area Headouarters
	Gouldhill in the state of the s
	Mallow, Co. Cork
Tel:	022 30200
Fax:	022 30211
e-mail:	gerry.oconnet has been been been been gerry.oconnet has been been been been been been been bee

#### B.7 (iii) Other Relevant Water Services Authorities

Regulation 13 of the Waste Water Discharge (Authorisation) Regulations, 2007 requires all applicants, not being the water services authority in whose functional area the relevant waste water discharge or discharges, to which the relevant application relates, takes place or is to take place, to notify the relevant water services authority of the said application.

Name:	Not Applicable
Address:	Not Applicable
Tel:	Not Applicable
Fax:	Not Applicable
e-mail:	Not Applicable

Relevant Authority Notified	Yes	No
		<b>V</b>

**Attachment B.7(iii)** should contain a copy of the notice issued to the relevant local authority.

Attachment included	Yes	No
		1

#### **B.8** Notices and Advertisements

Regulations 10 and 11 of the Waste Water Discharge (Authorisation) Regulations, 2007 require all applicants to advertise the application in a newspaper and by way of a site notice. See *Guidance Note*.

**Attachment B.8** should contain a copy of the site notice and an appropriately scaled drawing ( $\leq$ A3) showing its location. **The original application must include the original page of the newspaper in which the advertisement was placed**. The relevant page of the newspaper containing the advertisement should be included with the original and two copies of the application.

Attachment included	Yes	No
	ei 36.	

#### B.9 (i) Population Equivalent of Agglomeration

#### TABLE B.9.1 POPULATION EQUIVALENT OF AGGLOMERATION

The population equivalent (p.e.) of the agglomeration to be, or being, served by the waste water works should be provided and the period in which the population equivalent data was compiled should be indicated.

Population Equivalent	900
Data Compiled (Year)	2009
Method	Hydraulic Flow

#### **B.9 (ii)** Pending Development

Where planning permission has been granted for development(s), but development has not been commenced or completed to date, within the boundary of the agglomeration and this development is being, or is to be, served by the waste water works provide the following information;

- information on the calculated population equivalent (p.e.) to be contributed to the waste water works as a result of those planning permissions granted,
- the percentage of the projected p.e. to be contributed by the non-domestic activities, and
- the ability of the waste water works to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving water habitat.

The current population equivalent being treated at Ballyhooley WWTP is 545based on hydraulic flow assessments.

All developments with granted planning permission and all developments under construction have been included in the agglomeration. The additional p.e due to

the granted planning permissions is estimated to be in the order of 350 p.e. There are currently one recently planning permission in relation to non domestic activities.

With the completion of the recently commissioned 750 p.e WWTP the plant shall be capable of accommodating the existing and any additional hydraulic and organic loading without posing an environmental risk to the receiving percolation area

#### B.9 (iii) FEES

State the relevant Class of waste water discharge as per Column 1 of the Second Schedule, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of the Waste Water Discharges (Authorisation) Regulations 2007, S.I. No. 684 of 2007.

Class of waste water discharge	Fee (in €)
	€10,000

Appropriate Fee Included	Yes	No
	ther W	

#### **B.10** Capital Investment Programme

State whether a programme of works has been prioritised for the development of infrastructure to appropriately collect, convey, treat and discharge waste water from the relevant agglomeration. If a programme of works has been prioritised provide details on funding, (local or national), allocated to the capital project. Provide details on the extent and type of work to be undertaken and the likely timeframes for this work to be completed.

Recently the a new WWTP was installed at a cost of €0.4 M and the collection system for the village of Ballyhooley was also examined with a view to reducing the storm egression to the system.

These projects were upgraded under the Small Schemes Programme.

No works are listed to be carried out under the current Water Services Investment Programme 2007 -2009

**Attachment B.10** should contain the most recent development programme, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
		<b>V</b>

#### **B.11 Significant Correspondence**

Provide a summary of any correspondence resulting from a Section 63 notice issued by the Agency in relation to the waste water works under the

Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

**Attachment B.11** should contain a summary of any relevant correspondence issued in relation to a Section 63 notice.

Attachment included	Yes	No
		1

#### **B.12** Foreshore Act Licences.

Provide a copy of the most recent Foreshore Act licence issued in relation to discharges from the waste water works issued under the Foreshore Act 1933.

**Attachment B.12** should contain the most recent licence issued under the Forsehore Act 1933, including a copy of **all** conditions attached to the licence and any monitoring returns for the previous 12-month period, if applicable.

Attachment included	Yes	No √
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#### SECTION C: INFRASTRUCTURE & OPERATION

Advice on completing this section is provided in the accompanying Guidance Note.

#### **C.1** Operational Information Requirements

Provide a description of the plant, process and design capacity for the areas of the waste water works where discharges occur, to include a copy of such plans, drawings or maps, (site plans and location maps, process flow diagrams), and such other particulars, reports and supporting documentation as are necessary to describe all aspects of the area of the waste water works discharging to the aquatic environment. Maps and drawings must be no larger than A3 size.

#### C.1.1 Storm Water Overflows

For each storm water overflow within the waste water works the following information shall be submitted:

- An assessment to determine compliance with the criteria for storm water overflows, as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995 and any other guidance as may be specified by the Agency, and
- Identify whether any of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

  The story of the storm water overflows are to be decommissioned, and identify a date by which these overflows will cease, if applicable.

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#### **General Description of the Wastewater Treatment Plant**

#### 1. Plant description

The WWTP will cater for an estimated flow of  $178.5 \text{m}^3/\text{d}$  (1 Dry Weather Flow (DWF)) equating to a population equivalent of 220PE for Ballyhooley. However, the plant shall be designed to cater for an ultimate flow of 1,071  $\text{m}^3/\text{d}$  (6DWF) equating to a population equivalent of 750 PE.

#### 2. Inlet Works Flume

An open flume type flowmeter and an ultra level sensor is installed on the inlet channel leading to the screening and compaction unit. An automatic sampler is also positioned on this inlet channel.

#### 3. Automatic Screen

Following the inlet flume the inlet channel splits into two channels, one of these leads to the Automatic Screen and the second leads to the manually raked bypass screen. The automatic screen operates continuously on a duty basis. The manual screen is intended for use when the automatic screen is switched off for maintenance purposes or during storm conditions. The Automatic Screen intercepts, disintegrates and pumps screenings though a discharge port while allowing filtrate to flow through the unit and on to treatment.

The screenings are captured in the screen and elevated to the conveying zone and onto the compaction zone where they are dewatered before being discharged into the holding vessel Compaction takes place by the action of the screw that sequences the screenings in the upper section of the screen.

The screen in the Inlet Works is controlled by means of two ultrasonic level sensors supplied with the screening unit. Should the level in the channel rise and reach a set point the screen will start. When the low level cut out point in the inlet channel is reached, the screen shall run on for a set time periods and then stop. It should be noted that the screen does not need to operate continuously while there is a flow through the inlet channel. A wash water supply for this unit will be taken from a pumped supply from the final effluent, a solenoid valve will be fitted on this supply to allow water flow only when the screen is operating.

#### 4. Inlet Sump

The screened influent flows into the inlet sump by gravity. Two Nr submersible Zenit pumps, arranged in a duty / standby operation, (alternate arrangement), pump the influent from the inlet sump to the 2 Nr CAS Tanks. DOL Starters control both pumps. An ultrasonic measuring probe measures the level of the liquid in the inlet sump. When the level in the sump rises to the duty start level, the duty pump is started. Should the liquid level continue to rise and reaches the high alarm level point, a high level alarm level will be generated at the control panel. As the liquid level drops, the level reaches the duty cut-out level turning off the pump. The ultrasonic sensor also monitors a low-low level condition in the sump to safeguard against dry running of the pumps. In the event of the inlet flow in the inlet sump exceeding the capacity of the running pumps (during storm

event) the liquid will overflow through a weir into the adjacent storm holding tank. When the storm abates the wastewater retained in the tank will then flow by gravity back into the inlet sump through a flap valve.

#### 5. Storm water Tank

The storm water r tank fills from and returns to the inlet sump, as described above. If the capacity of the storm tank is exceeded, screened effluent from the tank discharges over a weir to the outlet sewer. When the storm abates, the storm water in the tanks will gravity flow back to the inlet sump and receive full treatment.

When the storm tank empties, the washing cycle will commence. The cleaning system inlet valve opens for a set amount of time allowing water from the mains supply to clean the unit.

#### 6. Biological Treatment – CAS Tanks

The screened effluent enters the aeration zone of the 2 Nr CAS Tanks. Dissolved oxygen probes positioned in each tank will monitor oxygen levels. The controllers for these units are mounted din the control panel.

Two air blowers in a duty/standby arrangement will provide the air for the CAS Tanks. Both blowers will have variable speed drives. The speed of the air blowers will be controlled by the inject pressure transducer. Digital actuated valves are positioned on the air inject line to each CAS Tank. These valves are controlled directly by dissolved oxygen monitors.

The standby blower will automatically cut-in if the duty blower fails. Each blower motor will run at a set minimum speed to ensure proper ventilation of the unit. The air blower enclosures are each fitted with a cooling fan.

#### 7. Biological Treatment Settlement Chamber

Following the aeration process the mixed liquor activated sludge passes into the settlement chamber where conditions are favourable for solids to settle resulting in an effluent that meets the require standards. In the Settlement Tank settled sludge in the bottom of the clarifier is pumped by the Return Activated Sludge pumps to the aeration zone of the CAS Tank to undergo biological treatment again or will be pumped to the Waste Activated Chamber (WAS). These pumps will operate on a duty basis will run for a set amount of time to be determined during commissioning of the plant. The scum that accumulates at the top of the clarifier is removed by a scum collector box and gravitates to the WAS Chamber. The final treated effluent gravitates from the clarifier to the outlet main.

#### 8. Waste Activated Chamber

The WAS Chamber is fitted with a duty/standby pumps. Once a predetermined high level is reached in the WAS Chamber the duty pump will commence operation and pump to the sludge holding tank. The ultrasonic level sensor monitors the level of the WAS Chamber at all times.

The plant incorporates a sludge holding tank adequately sizes for the storage of waste activated sludge. The WAS Pump pumps the excess sludge to the holding tank. The supernatant from the sludge holding tank overflows

by gravity to the inlet sump and is recycled through the process. The level of the sludge in the sludge holding tank will be monitored by means of an ultrasonic level sensor. Settled sludge will be removed intermittently from the tank through the Bauer Connection.

The cover of the sludge holding tank is fitted with a passive de-odouriser to clean odours emanating from the air within the storm tank before it escapes to the atmosphere. These filters contain activated charcoal, which removes odours and hydrogen sulphide from the air.

#### 9. Outlet Works

The final effluent is subjected to outflow measurement and sampling. A magnetic flowmeter is installed on the gravity line and a automatic sampler is also provided.

Consent of convinding owner required for any other use.

#### C.1.2 Pumping Stations

For each pump station operating within the waste water works, provide details of the following:

- Number of duty and standby pumps at each pump station;
- The measures taken in the event of power failure;
- Details of storage capacity at each pump station;
- Frequency and duration of activation of emergency overflow to receiving waters. Clarify the location where such discharges enter the receiving waters.

## There are no pumping stations located within the agglomeration of Ballyhooley.

**Attachment C.1** should contain supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, D.2, E.3 and F.2.

Attachment included	es of for ar	Yes	No
	outpositied	√	

#### C.2 Outfall Design and Construction

Provide details on the primary discharge point & secondary discharge points and storm overflows to include reference, location, design criteria and construction detail.

**Attachment C.2** should contain any supporting documentation on the design and construction of <u>any and all</u> discharge outfalls, including stormwater overflows, from the waste water works.

Type of	225mm diameter outfall pipe from wastewater treatment plant. Open
Discharge	pipe
Unique	SW - 01 BALY
Point Code	
Location	WWTP site Conva, Ballyhooley
Grid ref	172596E 099026N
(6E, 6N)	

The primary discharge point, SW01-BALY, is the main outlet from Ballyhooley Wastewater Treatment Plant. The outfall traverses a glen forest area in southerly direction to the River Blackwater. The point of discharge is a 225mm concrete open pipe.

Attachment included	Yes	No
		<b>V</b>

#### **SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT**

Advice on completing this section is provided in the accompanying Guidance Note.

Give particulars of the source, location, nature, composition, quantity, level and rate of discharges arising from the agglomeration and, where relevant, the period or periods during which such emissions are made or are to be made.

Details of all discharges of waste water from the agglomeration should submitted web via the following based http://78.137.160.73/epa wwd licensing/. The applicant should address in particular all discharge points where the substances outlined in Tables D.1(i), (b) & (c) and D.1(ii), (b) & (c) of Annex 1 are emitted.

Where it is considered that any of the substances listed in Annex X of the Water Framework Directive (2000/60/EC) or any of the Relevant Pollutants listed in Annex VIII of the Water Framework Directive (2000/60/EC) are being discharged from the waste water works or are seen to be present in the receiving water environment downstream of a discharge from the works (as a result of any monitoring programme, e.g., under the Water Framework Directive Programme of Measures) the applicant shall screen the discharge for the relevant substance.

#### **D.1**

Discharges to Surface Waters of all discharges Details of all discharges of waste water from the agglomeration should be supplied the (Willowing web based http://78.137.160.73/epa\_wwd\_licensing/. Tables D.1(i)(a), (b) & (c), should be completed for the primary discharge point from the agglomeration and Tables D.1(ii)(a), (b) & (c) should be completed for **each** secondary discharge point, where relevant. Table Datiii)(a) should be completed for each storm water overflow. <u>Individual Tables must be completed for each discharge point.</u>

Where monitoring information is available for the influent to the plant this data should also be provided in response to Section D.1.

Supporting information should form **Attachment D.1** 

Attachment included	Yes	No

#### **D.2** Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

Table D.2:

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
SW 1 - BALLY	Primary	Cork County Council	River	Blackwater	Salmonid	172596	099026

An individual record (i.e. row) is required for each discharge point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, E.3 and F.2.

Consent of copyright owner required for any other use.

#### **SECTION E: MONITORING**

Advice on completing this section is provided in the accompanying Guidance Note.

# E.1 Waste Water Discharge Frequency and Quantities – Existing & Proposed

Provide an estimation of the quantity of waste water likely to be emitted in relation to all primary and secondary discharge points applied for. This information should be included in Table E.1(i) via the following web based link: <a href="http://78.137.160.73/epa\_wwd\_licensing/">http://78.137.160.73/epa\_wwd\_licensing/</a>.

Provide an estimation of the quantity of waste water likely to be emitted in relation to all storm water overflows within the agglomeration applied for. This information should be included in Table E.1(ii) via the following web based link: <a href="http://78.137.160.73/epa\_wwd\_licensing/">http://78.137.160.73/epa\_wwd\_licensing/</a>.

Indicate if composite sampling or continuous flow monitoring is in place on the primary or any other discharge points. Detail any plans and timescales for the provision of composite sampling and continuous flow meters.

#### E.2. Monitoring and Sampling Points

Programmes for environmental monitoring should be submitted as part of the application. These programmes should be provided as Attachment E.2.

Reference should be made to, provision of sampling points and safe means of access, sampling methods, analytical and quality control procedures, including equipment calibration, equipment maintenance and data recording/reporting procedures to be carried out in order to ensure accurate and reliable monitoring.

In determining the sampling programme to be carried out, the variability of the emission and its effect on the receiving environment should be considered.

Lab Sampling and testing is done in accordance with 'Sampling Methods for examination of water and wastewater' 18<sup>th</sup> edition 1992.

Details of any accreditation or certification of analysis should be included. **Attachment E.2** should contain any supporting information.

Attachment included	Yes	No
		1

#### E.3. Tabular data on Monitoring and Sampling Points

Applicants should submit the following information for each monitoring and sampling point:

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW01	Primary	SAMPLING	172668	099051	N
aSW01u	u/s	Sampling	171490	099111	N
aSW01d	d/s	Sampling	172931	098752	N

An individual record (i.e., row) is required for each monitoring and sampling point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and F.2.

#### E.4 Sampling Data

Regulation 16(1)(h) of the Waste Water Discharge (Authorisation) Regulations 2007 requires all applicants in the case of an existing waste water treatment plant to specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application.

Regulation 16(1)(I) of the regulations requires applicants to give details of compliance with any applicable monitoring requirements and treatment standards.

**Attachment E.4** should contain any supporting information.

Attachment included	Yes	No
	1	

# SECTION F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)

Advice on completing this section is provided in the accompanying Guidance Note.

Detailed information is required to enable the Agency to assess the existing receiving environment. This section requires the provision of information on the ambient environmental conditions within the receiving water(s) upstream and downstream of any discharge(s).

Where development is proposed to be carried out, being development which is of a class for the time being specified under Article 24 (First Schedule) of the Environmental Impact Assessment Regulations, the information on the state of the existing environment should be addressed in the EIS. In such cases, it will suffice for the purposes of this section to provide adequate cross-references to the relevant sections in the EIS.

#### F.1. Assessment of Impact on Receiving Surface or Ground Water

- o Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those into which the emissions are to be made.
- Details of all monitoring of the receiving water should be supplied via the following web based link: <a href="http://x.8.137.160.73/epa wwd licensing/">http://x.8.137.160.73/epa wwd licensing/</a>. Tables F.1(i)(a) & (b) should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables F.1(i)(a) & (b). Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.
- For discharges from secondary discharge points Tables F.1(ii)(a) & (b) should be completed. Furthermore, provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.
- Provide details of the extent and type of ground emissions at the works. For larger discharges to groundwaters, e.g., from Integrated Constructed Wetlands, large scale percolation areas, etc., a comprehensive report must be completed which should include, inter alia, topography, meteorological data, water quality, geology, hydrology, The latter must in particular present the aquifer hydrogeology. classification and vulnerability. The Geological Survey of Ireland Groundwater Protection Scheme Dept of the Environment and Local Government, Geological Survey of Ireland, EPA (1999) methodology should be used for any such classification. This report should also identify all surface water bodies and water wells that may be at risk as a result of the ground discharge.

- Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.
- Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No.* 12 of 2001) to water are likely to impair the environment.
- o In circumstances where water abstraction points exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia, in the receiving water environment.
- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –
  - (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive)
    - (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,
    - (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or
    - (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,
  - (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC¹ in accordance with the procedures laid down in Article 21 of that Directive,
  - (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or
  - (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC<sup>2</sup>;
  - <sup>1</sup>Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)
  - <sup>2</sup>Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

 Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.

This section should also contain full details of any modelling of discharges from the agglomeration. Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment F.1.** 

The plant is performing satisfactorily at present and operating within the requirements of the following legislation. As the plant has been recently upgraded there are no further improvements planned at present for the Ballyhooley Wastewater Treatment Plant.

#### Water Quality Standards

The Water Framework Directive (WFD) aims to establish an integrated approach to water protection, improvement and sustainable use. In order to achieve the requirements of the WFD, Ireland has been divided into a number or River Basin Districts or management units. The South Western River Basin District (SWRBD) comprises substantially the counties of Cork and Kerry, all of Cork City, and also parts of counties Limerick, South Tipperary and Waterford.

The Blackwater River is included in the SWRBD. The overall objectives of the SWRBD project include the following:

- Strengthen compliance with EU Directives and national legislation
- Collect and analyse information to determine water quality and identify possible threats to water status
- Prevent further deterioration and protect/enhance water quality
- Develop a programme of measures to address all significant pressures and sourcess of impact on aquatic ecosystems and groundwater
- Encourage and facilitate public participation including the maintenance of a project website
- Promote sustainable water use

In order to achieve these objectives the following project tasks have been identified:

- Identify pressures on water bodies and assess risk of not achieving compliance with the Water Framework Directive
- Prepare a Characterisation Report
- Identify Heavily Modified (HMWB) and Artificial Water Bodies (AWB)
- Establish risk to waters from Hazardous Substances
- Establish data management system and GIS
- Prepare programme of measures
- Review of monitoring needs
- Design monitoring programme
- Prepare River Basin Management Strategy
- Assist public participation in the project
- Prepare printed reports
- Assist capacity building

The SWRBD has proposed water quality standards for the Blackwater River under a water quality / catchments management plan. The Blackwater is classified as Poor ecological quality status on the ground of biological quality data. Note also this is located in a Margaritifera margaritifera (freshwater pearl mussel) which is a protected area and for such sites the water quality standards

that need to be achieved will be higher than for other areas as these are a species of high conservation importance.

The River Basin Management System currently being developed will include a programme of measures and a River Basin Management Strategy, designed to achieve at least good status for all waters by 2015, and to maintain high status where it exists. Therefore discharges from Ballyhooley Wastewater Treatment Plant cannot cause deterioration in good water quality under the Water Framework Directive at present.

The River Blackwater is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.200 of 1994.

The River Blackwater is designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988.

The River Blackwater is not designated a Bathing Water under the Bathing Water Regulations, S.I. 178 of 1998 as amended.

The River Blackwater downstream of Mallow Railway to Ballyduff Bridge is a designated Sensitive Area. The discharge point from Ballyhooley Wastewater Treatment wastewater works is located along this section of the river.

Drinking Water is not abstracted downstream of the discharge point from the WWTP. Ballyhooley Public Water Supply is supplied by a spring supply located at the Castletownroche Area located approximately 6.5km northwest of the discharge point from Ballyhooley WWTP.

#### Areas of Conservation

The Department of the Environment, Heritage and Local Government is responsible for the designation of conservation sites in Ireland. It is required under European law and national laws to conserve habitats and species, through designation of conservation areas under Special Areas of Conservation, Natural Heritage Areas and Special Protected Areas.

Special Areas of Conservation

Candidate Special Areas of Conservation (cSACs) are protected under the European Union (EU) Habitats Directive (92/43/EEC), as implemented in Ireland by the European Communities (Natural Habitats) Regulations, 1997.

The Blackwater River cSAC (Site Code: 002170) is very large, extending from the tidal estuary of the river at Youghal Co. Cork to the upper tributaries and their flood plains, in Cos. Cork Kerry, Limerick, Tipperary and Waterford, including the Awbeg River is a designated Special Area of Conservation.

The cSAC is designated on the basis of the presence of a large number of EU Habitats Directive Annex 1 habitats and Annex 2 species. Many of these are estuarine habitats and species found only in the lower reaches of the River Blackwater, however a number may be present in the Awbeg River section of the cSAC including, for example the Annex 1 habitats, 'alluvial wet woodlands', 'floating river vegetation', and 'old oak woodlands'; and the Annex 2 species sea lamprey, river lamprey, brook lamprey, Atlantic salmon, freshwater pearlmussel and otter.

The Blackwater River Site Synopsis is included in this attachment.

#### Natural Heritage Areas

The Blackwater River flows through a Proposed Natural Heritage Areas (NHA) upstream and downstream of the discharge pint. Natural Heritage Areas are the basic designation for wildlife. An NHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

Under the Wildlife Amendment Act 2000, NHAs are legally protected from damage from the date they are formally proposed for designation.

#### Special Protected Areas

Special Protection Areas (SPAs) are designated in order to safeguard certain habitats pursuant to EU Directive requirements. The EU Birds Directive (79/409/EEC) requires designation of SPAs for listed rare and vulnerable species, migratory species and wetlands.

There are areas of the River Blackwater that are designated SPAs, however these are located downstream of Fermoy and therefore greater than 2km from all discharge points.

#### **Receiving Water Quality Requirement**

Water Quality analysis data for the River Blackwater was obtained from Cork County Council. The EPA also takes samples from a number of locations along the River Blackwater. These stations are the flowing.

- Killavullen Bridge upstream of Ballyhooley WWTP discharge point by approximately 10km
- Ballyhooley Bridge downstream of Ballyhooley WWTP discharge point by approximately 400m.

Table F1-1: Biological Quality Rating for River Blackwater – Upstream & Downstream of Discharge

Sampling Location	EPA Biological Quality Rating (Q values)		
	Baseline	2001 - 2003	Target
Killavullen Bridge	3 - 4	4	4
Ballyhooley Bridge	3 - 4	4	4

The Royal Commission in its report on Water Quality Guidelines recommends that "in all circumstances effluent discharges which are calculated to raise the BOD of the receiving water, outside the mixing zone, by more than 1 mg/l should be discouraged". The average existing background level for BOD is estimated at 1mg/l. Therefore the receiving water limiting value for BOD for this river is 2mg/l.

The standard water quality requirements for dangerous substances are based on the Water Quality (Dangerous Substances) Regulations 2001.

Hence, the principal receiving water quality requirements are given in Table 3 below: -

Table F1-2: Receiving Water Quality Limiting Values

Parameter	Water Quality Standard (mg/l)
Chromium	30
Copper	30
Lead	10
Nickel	50
Zinc	100

Based on Hardness of receiving waters >100mg/l CaCO3

#### **Effluent Standards**

The treated effluent quality requirements shown in the table below are determined with respect to the EC Urban Wastewater Directive, given effect in Irish Law by S.I.254 of 2001.

Table F1-3: Minimum Effluent Standards based on S.I.254 of 2001 and Recorded Effluent Concentrations

Parameter	Effluent Standards (mg/l)	Actual Concentrations* (mg/l)
Biological Oxygen Demand (BOD)	25	31.3
Suspended Solids (SS)	35	37.7

<sup>\*</sup>Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Apr '08 to May '09.

#### a) Mass Balance Equation for Orthophosphate:

Median flow of River = 32 m<sup>3</sup>/sec Median oPO<sub>4</sub>-P in River (upstream) = 0.05 mg/L

Average volume of discharge =  $0.0025 \text{ m}^3/\text{sec}$ Median value for oPO<sub>4</sub>-P in discharge = 3.65 mg/L

$$C_{final} =$$
 (32 x 0.05) + (0.0025 x 3.65)  
32+ 0.0025

 $C_{final} = 0.0503 \text{ mg/L oPO}_4-P$ 

The increase in Orthophosphate due to the discharge of the WWTP is 0.3  $\mu$ g/L.

#### b) <u>Mass Balance Equation for BOD:</u>

Flow of River (95%) =  $6.83 \text{ m}^3/\text{sec}$ 

Average BOD in River (upstream) = 2 mg/L

Average volume of discharge =  $0.0025 \text{ m}^3/\text{sec}$ Average BOD in discharge = 31.33 mg/L

$$C_{final} =$$
 (6.83 x 2) + (0.0025 x 31.33)  
6.83 + 0.0025

 $C_{final} = 2.01 \text{ mg/L BOD}$ 

The increase in BOD due to the discharge of the WWTP is 0.01 mg/L.

#### c) <u>Mass Balance Equation for Suspended Solids:</u>

Flow of River (95%) =  $6.83 \text{ m}^3/\text{sec}$ Average Suspended Solids in River (upstream) = 5.125 mg/L

Average volume of discharge = 0.0025 m<sup>3</sup>/sec Average Suspended Solids in discharge = 37.7 mg/L

$$C_{final} = \frac{(6.83 \times 5.125) + (0.0025 \times 30.37)}{6.83 + 0.0025}$$

C<sub>final</sub> = 5.14 mg/L Suspended Solids

The increase in Suspender Solids due to the discharge of the WWTP is 0.015 mg/L.

#### d) Mass Balance Equation for Total Phosphate:

50% Median flow of River = 32 m<sup>3</sup>/sec Median TPO<sub>4</sub>-P in River (upstream) = 0.0775 mg/L

Average volume of discharge =  $0.0025 \text{ m}^3/\text{sec}$ Median TPO<sub>4</sub>-P in discharge = 4.906 mg/L

$$C_{final} =$$
 (32 x 0.078) + (0.0025 x 4.906)  
32 + 0.0025

 $C_{final} = 0.078 \text{ mg/L TPO}_4-P$ 

The increase in Total Phosphate due to the discharge of the WWTP is 0.5  $\mu$ g/L.

#### e) Mass Balance Equation for Total Nitrogen:

Flow of River (95%) =  $6.83 \text{ m}^3/\text{sec}$ Average Total Nitrogen in River (upstream) = 2.4 mg/L

Average volume of discharge = 0.0025 m<sup>3</sup>/sec Average Total Nitrogen in discharge = 30.5 mg/L

$$C_{\text{final}} =$$
 (6.83 x 2.4) + (0.0025 x 30.5)  
6.83 + 0.0025

 $C_{final} = 2.41 \text{ mg/L Total Nitrogen}$ 

The increase in Total Nitrogen due to the discharge of the WWTP is 0.01 mg/L.

# f) Mass Balance Equation for Sulphater

Flow of River (95%) = 6.83 m³/sec
Average Sulphate in River (upstream) and mg/L

Average volume of discharge = 0.0025 m³/sec Average Sulphate of discharge = 45.35mg/L

Average Sulphate in River (cownstream) = 30 mg/L

$$C_{final} =$$
 (6.83 x 30) + (0.0025 x 45.35)  
6.83+ 0.0025

 $C_{final} = 30.006 \text{ mg/L Sulphate}$ 

The increase in Sulphate due to the discharge of the WWTP is 0.006mg/L.

#### g) Mass Balance Equation for Ammonia-N:

Flow of River (95%) =  $6.83 \text{ m}^3/\text{sec}$ Average Ammonia-N in River (upstream) = 0.0725 mg/L

Average volume of discharge = 0.0025 m<sup>3</sup>/sec Average Ammonia-N in discharge = 5.95 mg/L

Average Ammonia-N in River (downstream) = 0.0725mg/L

$$C_{final} =$$
 (6.83 x 0.0725) + (0.0025 x 5.95)  
6.83 + 0.0025

 $C_{final} = 0.59 \text{ mg/L Ammonia}$ 

There is no increase in Ammonia due to the discharge of the WWTP

Assimilative Capacity Calculations were not performed for the following parameters, as the substances were below the limit of detection in the upstream samples, in the discharge samples and in the downstream samples:

- (a) Chromium
- (b) Copper
- (c) Lead
- (d) Nickel
- (e) Cadmium
- (f) Barium
- (g) Boron
- (h) Zinc
- (i) Fluoride

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# Discharges in proximity of Wastewater Works

Water quality analysis data presented in Tables 4 & 5 below was recorded by Cork County Council wastewater laboratory and covers a sampling period from April 2008 to July 2008.

Table F1-4: Upstream Water Quality

Parameter	Upstream Monitoring Station				
	19/03/09	17/04/09	14/05/09	25/05/09	
Ph	7.9	7.8	8.0	7.8	
BOD	<2	3	1	2	
SS	2	10	<2.5	6	
Ammonia	<0.05	0.06	<0.1	0.08	
Ortho- Phosphate	0.05	0.06	0.05	0.05	

Table F1-5: Downstream Water Quality

Parameter	Upstream Monitoring Station			
	19/03/09	17/04/09	14/05/09	25/05/09
Ph	7.9	7.7	8.0	7.7
BOD	<2	3	1	2
SS	2	9	<2.5	9
Ammonia	< 0.05	0.07	<0.1	0.07

Ortho-	0.05	0.06	0.05	0.07
Phosphate				

The data in the above tables confirms the wastewater discharge has little effect on the overall river quality given adequate flow in the river and dispersion time.

#### **Appropriate Assessments**

The development is in the surface water catchment of the River Blackwater, SAC 002170. In accordance with EPA Circular L8/08 Appendix 1, the project must be screened for its impacts. However, due to financial constraints, Cork County Council does not have the resources for the foreseeable future to assess the impacts in accordance with the EPA document, 'Waste Water discharge Licence – Appropriate Assessment'.

Attachment included	Yes	No
	1	

## F.2 Tabular Data on Drinking Water Abstraction Point(s)

Applicants should submit the following information for each downstream or downgradient drinking water abstraction point. The zone of contribution for the abstraction point should be delineated and any potential risks from the waste water discharge to the water quality at that abstraction point identified.

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD DIS_DS	EASTING	NORTHING	VERIFIED
Not	Not Applicable	Not	Not Not Applicable	Not	Not Applicable	Not
Applicable		Applicable	Applicable	Applicable		Applicable

**Note:** Attach any risk assessment that may have been carried out in relation to the abstraction point(s) listed.

An individual record (i.e. row) is required for each abstraction point. Acceptable file formats include Excel Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at www.epa.ie. This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, D.2 and E.3.

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

**Attachment F.2** should contain any supporting information.

### SECTION G: PROGRAMMES OF IMPROVEMENTS

Advice on completing this section is provided in the accompanying Guidance Note.

The plant is operating satisfactory at present and is operating within the requirements of the relevant legislation, outlined above. Recent improvements include the construction and commissioning of the new 500 PE WWTP and relining of foul manholes.

### Water Framework Directive 2000/60/EC

The Water Framework Directive (WFD) aims to establish an integrated approach to water protection, improvement and sustainable use. In order to achieve the requirements of the WFD, Ireland has been divided into a number or River Basin Districts or management units. The South Western River Basin District (SWRBD) comprises substantially the counties of Cork and Kerry, all of Cork City, and also parts of counties Limerick, South Tipperary and Waterford.

The overall objectives of the South Western River Basin District project include the following:

- Strengthen compliance with EU Directives and national legislation
- Collect and analyse information to determine water quality and identify possible threats to water status
- Prevent further deterioration and protect/enhance water quality
- Develop a programme of measures to address all significant pressures and sources of impact on aquatic ecosystems and groundwater
- Encourage and facilitate public participation including the maintenance of a project website
- Promote sustainable water use

In order to achieve these objectives the following project tasks have been identified:

- Identify pressures on water bodies and assess risk of not achieving compliance with the Water Framework Directive
- Prepare a Characterisation Report
- Identify Heavily Modified (HMWB) and Artificial Water Bodies (AWB)
- Establish risk to waters from Hazardous Substances
- Establish data management system and GIS
- Prepare programme of measures
- Review of monitoring needs
- Design monitoring programme
- Prepare River Basin Management Strategy
- Assist public participation in the project
- Prepare printed reports
- Assist capacity building

The EPA also takes samples from one location along the River Blackwater downstream (d/s) of the WWTP. This is located at the following location:

• Ballyhooley Bridge .4km d/s of discharge

Table G1-1: Upstream Water Quality

Parameter	Upstream Monitoring Station				
	19/03/09	17/04/09	14/05/09	25/05/09	
Ph	7.9	7.8	8.0	7.8	
BOD	<2	3	1	2	
SS	2	10	<2.5	6	
Ammonia	<0.05	0.06	<0.1	0.08	
Ortho- Phosphate	0.05	0.06	0.05	0.05	

Table G1-2: Downstream Water Quality

Parameter	Upstream Monitoring Station			
	19/03/09	17/04/09	14/05/09	25/05/09
Ph	7.9	7.7	8.0	7.7
BOD	<2	3	1	2
SS	2	9	<2.5	9
Ammonia	< 0.05	0.07	<0.1	0.07
Ortho- Phosphate	0.05	0.06	0.05	0.07

The data in the above tables confirms the wastewater discharge has little effect on the overall river quality given adequate flowing the river and dispersion time.

#### **Birds Directive 79/409/EEC**

Special Protection Areas (SPAs) are designated in order to safeguard certain habitats pursuant to EU Directive requirements. The EU Birds Directive (79/409/EEC) requires designation of SPAs for listed rare and vulnerable species, migratory species and wetlands.

There are areas of the River Blackwater which are designated SPAs however these are located downstream of Fermoy and therefore, greater than 2km from all discharge points.

#### **Groundwater Directives 2006/118/EC**

The Groundwater Directive 2006/118/EC has been developed in response to the requirements of Article 17 of the Water Framework Directive: Strategies to prevent and control pollution to groundwater. Groundwater Quality standards are to be established by the end of 2008.

Doneraile – Clogher, Castletownroche Nr 1 and Castletownroche 2 are the closest PWS that utilise ground water for medium sized water supplies.

With the proper mitigation measures in place the operation of the wastewater treatment plant does not have any significant negative impacts on the existing groundwater.

#### **Drinking Water Directives 80/778/EEC**

There are no areas along the River Blackwater downstream of Ballyhooley WWTP designated for the abstraction of water intended for human consumption.

#### **Urban Waste Water Treatment Directive 91/271/EEC**

The Urban Wastewater Treatment Regulations (S.I. 254 of 2001) gives effect to provisions of the Urban Wastewater Treatment Directive (91/271/EEC). The 2001 Irish Regulations cover the various requirements in relation to the collection and treatment of urban wastewater.

Article 4(1)(c) states that "In the case of urban wastewater entering collecting systems, a sanitary authority shall provide treatment plants, which provide for secondary treatment or an equivalent treatment by 31 December 2005 in respect of all discharges to freshwaters and estuaries from agglomerations with a population equivalent of between 2,000 and 10,000."

The Ballyhooley Wastewater Treatment Plant was commissioned in 2007 and was designed to treat effluent to a 25/35ppm standard.

The Second Schedule (Part 1) of the 2001 Regulations states that effluent should be treated to the following standards.

Table G1-3: Minimum Effluent Standards based on SI 254 of 200	Table G1-3:	Minimum	<b>Fffluent</b>	Standards	based on	SI 254 of 200	71
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Parameter	Conc. (mg/l)	Minimum Percentage of Reduction
Biochemical Oxygen Demand (BOD)	25 only all	70 - 90
Chemical Oxygen Demand (COD)	125 purgequire	75
Suspended Solids	35 pectrume	90

The aeration and clarifying plant at the new Ballyhooley wastewater treatment plant is treating effluent to a high standard. Efficiencies of BOD, COD and SS removal for the plant is typically in excess of 85%. The effect of the discharges on the quality of the receiving waters is assessed in Attachment F1.

The Third Schedule of the 2001 Regulations gives a list of Sensitive areas.

Article 4(2)(a) states that all discharges into Sensitive Areas require more stringent treatment than secondary treatment. The River Blackwater downstream of Mallow Railway Bridge to Ballyduff Bridge is designated a Sensitive Area.

The Fifth Schedule of the 2001 Regulations gives a methodology for monitoring the final effluent from the wastewater treatment plant. Item 3 states "The minimum annual number of samples shall be determined according to the size of the treatment plant and be collected at regular intervals during the year." For a PE of between 2000-9999 4 samples should be taken each year. Cork County Council wastewater laboratory carries out regular testing at the outlet of the treatment plant.

#### Shellfish Directive 79/923/EEC

The River Blackwater is not a designated Shellfish Area under the Shellfish Waters Regulations, S.I. 200 of 1994.

**Habitats Directive 92/43/EEC** 

Candidate Special Areas of Conservation (cSACs) are protected under the European Union (EU) Habitats Directive (92/43/EEC), as implemented in Ireland by the European Communities (Natural Habitats) Regulations, 1997.

The Blackwater River cSAC (Site Code: 002170) is very large, extending from the tidal estuary of the river at Youghal Co. Cork to the upper tributaries and their flood plains, in Cos. Cork Kerry, Limerick, Tipperary and Waterford.

The cSAC is designated on the basis of the presence of a large number of EU Habitats Directive Annex 1 habitats and Annex 2 species.

The Blackwater River Site Synopsis is included in this attachment.

#### **Environmental Liabilities Directive 2004/35/EC**

The Environmental Liability Directive is about preventing and remedying environmental damage. It aims to hold operators whose activities have caused environmental damage financially liable for remedying this damage, and it aims to hold those whose activities have caused an imminent threat of environmental damage liable for taking preventive actions.

Cork County Council Wastewater Laboratory carries out monitoring of the effluent from the wastewater treatment plant on a regular basis.

Failure to meet the specified treated effluent standards may result in final penalties to Cork County Council. As a result, the risk of environmental pollution from the treatment plant may be reduced.

## Bathing Water Directive 76/160 FEC

The River Blackwarer is not designated a Bathing Water under the Bathing Water Regulations, S.I. 178 of 1998 as amended.

#### Dangerous Substances Directive 2006/11/EC

The level of dangerous substances in both the effluent discharged from Ballyhooley wastewater treatment plant and the river itself is significantly lower than the concentration limits set in the directive.

**Attachment G.1** should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
	<b>V</b>	

# G.2 Compliance with Water Quality Standards for Phosphorus Regulations (S.I. No. 258 of 1998).

Provide details on a programme of improvements, including any water quality management plans or catchment management plans in place, to ensure that improvements of water quality required under the Water Quality Standards for Phosphorous Regulations (S.I. No. 258 of 1998) are being achieved. Provide details of any specific measures adopted for waste water works specified in Phosphorus Measures Implementation reports and the progress to date of those measures. Provide details highlighting any waste water works that have been identified as the principal sources of pollution under the P regulations.

# Receiving Water Quality Requirement based on Phosphorus Regulations 2008

The effluent arising from the WWTP is discharge to the River Blackwater, which flows adjacent to the WWTP site boundary.

The EPA have a number stations on the River Blackwater, upstream along the Blackwater the Q value of the river is 4, while downstream of the River the Q value is 4.

#### **Effluent Standards**

The treated effluent quality requirements are determined with respect to the EC Urban Wastewater Directive, given effect in Irish Law by S.I.254 of 2001. The wastewater treatment processes should reduce nutrients in the final effluent. The minimum effluent standard based on S.I.254 of 2001 for Phosphorus in wastewater effluent is 2mg/l.

As a natural consequence of secondary treatment, there will be an uptake of phosphorous for biomass synthesis at the wastewater treatment plant in Ballyhhooley. This is evident from Tables 3.24 below showing the uptake of phosphorus through the wastewater treatment plant.

Table G2-3: Phosphorus Levels in Influent to WWTP

Parameter	Inlet Monitoring Stati	on
	14/05/09	25/05/09
Ortho-Phosphate	4.16 cm	5.6

Table G2-4: Phosphorus Levels in Effluent from WWTP

Parameter	<b>Outlet Monitoring Sta</b>	tion
	14/05/09	25/05/09
Ortho-Phosphate	4.72	3.3

**Attachment G.2** should contain the most recent programme of improvements and any associated documentation requested under Section G.3 of the application.

Attachment included	Yes	No
		1

#### **G.3** Impact Mitigation

Provide details on a programme of improvements to ensure that discharges from the agglomeration will not result in significant environmental pollution. Recently the WWTP was upgraded at a cost of €0.5 M. These projects were upgraded under the Small Schemes Programme 2002 -2006. No further works are listed to be carried out under the current Water Services Investment Programme 2007 -2009.

With these recent improvements to the WWTP it will ensure that discharges from the agglomeration will not result in significant environmental pollution.

**Attachment G.3** should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

Attachment included	Yes	No
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#### **G.4** Storm Water Overflow

Provide details on a programme of improvements to ensure that discharges other than the primary and secondary discharges comply with the definition of 'storm water overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007.

There are no storm overflows for the agglomeration of Ballyhooley.

**Attachment G.4** should contain the most recent programme of improvements, including a copy of any approved funding for the project and a timeframe for the completion of the necessary works to take place.

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Attachment included	institu	Yes	No
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# SECTION H: DECLARATION

#### Declaration

I hereby make application for a waste water discharge licence/revised licence, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission, whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

DIRECTUR

Signed by: (on behalf of the organisation)

Date : 14

SELVILES

Print signature name/:

Position in organisation:

#### SECTION I: JOINT DECLARATION

# Joint Declaration Note1

I hereby make application for a waste water discharge licence/revised licence, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).

I certify that the information given in this application is truthful, accurate and complete.

I give consent to the EPA to copy this application for its own use and to make it available for inspection and copying by the public, both in the form of paper files available for inspection at EPA and local authority offices, and via the EPA's website.

This consent relates to this application itself and to any further information or submission whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

<u>Lead Authority</u>	at Use.
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Position in organisation:	

**Note 1**: In the case of an application being lodged on behalf of more than a single water services authority the following declaration must be signed by all applicants.

Consent of copyright owner required for any other use