Comhairle Contae Chorcaí
Cork County Council

Annabella,
Mallow,
Co. Cork.
Tel: (022) 21123 • Fax: (022)21983
Email: northcork@corkcoco.ie
Web: www.corkcoco.ie
Annabella,
Mala,
Co. Chorcaí.
Fón: (022) 21123 • Faics: (022) 21983
R-phost: northcork@corkcoco.ie
Suíomh Gréasáin: www.corkcoco.ie

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

19th June 2009

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

Dear Sir / Madam,

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

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, Table E.3 and F.2

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

Environmental Protection Agency
Waste Licensing
Received 22 JUN 2009
Initials _____

This is a draft document and is subject to revision.

Waste Water Discharge Licence Application Form

EPA Ref. Nº: *(Office use only)*	

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'. Amend wording of Checklist in Annex to reflect wording of Regulation 16(5) of S.I. No. 684 of 2007. Inclusion of unique point code for each point of discharge and storm water overflow.	To accurately reflect the information required To accurately reflect the Regulations and to obtain the application documentation in appropriate format. To aid in cross-referencing of application documentation.
V.4	18/04/08	Inclusion of requirement to provide name of agglomeration to which the application relates. Amend wording of Section B.7. (iii) to reflect the title of Water Services Authority. Addition of new Section B.9 (ii) in order to obtain information on developments yet to contribute to the waste water works. Addition of sub-sections C.1.1 & C.1.2 in order to clarify information required for Storm water overflow and pumping stations within the works. Amend Section D.1 to include a requirement for monitoring data for influent	To accurately determine the agglomeration to be licensed. To accurately reflect the Water Services Act, 2007. To obtain accurate population equivalent figures for the agglomeration. To obtain accurate information on design and spill frequency from these structures. To acquire information on the population loading onto the plant and to provide information on performance rates within

		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. Amendment to Section F.1 to specify the type of monitoring and reporting required for the background environment. Removal of Annexes to application form.	To clarify the reporting requirements. To streamline reporting requirements. To clarify the reporting requirements for ambient monitoring. To reflect the new web based reporting requirements.

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

CONTENTS

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 and 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 guarantee, 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.

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. <u>The abbreviation "N/A" should not be used</u>.

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: Drawings. The following guidelines are included to assist applicants:

- *All drawings submitted should be titled and dated.*
- *All drawings should have a unique reference number and should be signed by a clearly identifiable person.*
- *All drawings should indicate a scale and the direction of north.*
- *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

The village of Bweeng is located on the Southern end of Mallow Area. It is situated on the R619 regional road and is approximately 20km from Mallow Town.

The Waste Water Works and the Activities Carried Out Therein

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

Bweeng WWTP is designed for a Population Equivalent (PE) of 500, which was commissioned in 2007. Membrane Technology is the process employed at the Bweeng waste water treatment plant. Influent initially gravitates into a underground inlet sump via an automatic screen and flume. From the inlet sump the effluent is pumped to a Primary Settlement Tank, which effluent is allowed to settle. The effluent then flows into the adjacent MBR tank for further treatment by means of membrane treatment.

In the event of high storm flows effluent may bypass the MBR Plant by overflowing at the inlet sump and discharging to the outlet flume.

Currently the WWTP is receiving flows ranging from 100m^3/d to 300m^3/d, with an average DWF of 100m^3/d entering the plant. Based average hydraulic load of 200l/d/p, the PE equates to 500.

Bweeng 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 Bweeng agglomeration arises from the following areas:

- Domestic population
- Commercial premises
- 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 100m^3/d to 300m^3/d, with an average DWF of 100m^3/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 a constructed percolation area which is adjacent to the wastewater treatment plant site. The maximum flow to the existing WWTP is in the order of 100m^3/d to 300m^3/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
- Primary Settlement Tank
- MBR Tank
- Sludge Tank
- Outfall to Percolation Area

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.

The system in Bweeng is modular and can easily be expanded to a however currently there are no further works envisaged to be undertaken on Bweeng 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, overflow 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 — Attachment A1 Map 1
- Site Location Map of WWTP — Attachment A1 Map 2
- Site Layout — Attachment A1 Map 3

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Bweeng & 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 clearly marked in red ink.

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

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

*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

*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

*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

*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**
	√	

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.

Name*:	Pat Walsh
Address:	Cork County Council
	Beennanweel West
	Mallow
	Co. Cork
Grid ref (6E, 6N)	150293E 088061N
Level of Treatment	Secondary
Primary Telephone:	022-30400
Fax:	022-21983
e-mail:	Pat.walsh@corkcoco.ie

***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 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.1, B.3, B.4, B.5, C.1, D.2, E.3 and F.2.

Attachment included	**Yes**	**No**
	√	

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 Discharge	225mm diameter outfall pipe from wastewater treatment plant to percolation area followed by discharge to Cummen Stream
Unique Point Code	SW – 01 BWNG
Location	WWTP site Beennanweel West
Grid ref (6E, 6N)	150251E 088034N

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	**Yes**	**No**
	√	

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.

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

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

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	**Yes**	**No**
		√

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	√	***is being processed***	
is not yet applied for		***is not required***	

Local Authority Planning File Reference Nº:	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**
	√	

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**
		√

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 Headquarters
	Gouldhill
	Mallow, Co. Cork
Tel:	022 30200
Fax:	022 30211
e-mail:	Gerry.oconnell@hse.ie

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**
		√

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

Attachment included	Yes	No
		√

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 (≤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
	√	

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	**990**
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 Bweeng WWTP is 500 based 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 490 p.e.

With the completion of the recently commissioned 500 p.e WWTP the plant shall be capable of accommodating the existing and 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
	√	

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 €0.5 M and the collection system for the village of Bweeng 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.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**
		√

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**
		√

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.

General Description of the Wastewater Treatment Plant

Inlet Works

An open flume type flowmeter is installed on the inlet channel leading to the screening and compaction unit. An ultrasonic level sensor will also be positioned in this flume to record the flow through the flume. An automatic sampler is also positioned on this inlet channel.

The inlet screen system consists of an EPS Screen Brush, a level probe, a Macerator Pump, an ultrasonic level sensor & a Liquid Separator.

Flow enters the inlet screen chamber, the level of this flow is detected by the level probe, once a predetermined high level is reached the Screen Brush motor will commence operation. This motor will run continuously until the level probe detects a low level. Once this low level is detected the screen brush motor will rotate for one more complete revolution until a parking switch is made, this then stops the motor.

The screenings from the screen brush are collected in the macerator sump, the level in this sump is monitored by an ultrasonic level sensor, once a predetermined high level is reached the macerator pump and the Liquid separator will commence operation. These motors will run until the ultrasonic level sensor detects a low level.

Inlet Balance Tank

The screened effluent flows into the Inlet balance tank, which is fitted with two submersible pumps operating in duty/standby configuration. Automatic changeover of these pumps will be every 8 hours. The inlet balance tank is fitted with an ultrasonic level sensor, which controls the operation of the pumps. The duty pump will start when the sewage reaches a predetermined high level in the sump and cut out at a low level. The pumps are to operate at a constant flow rate when in operation, this is achieved by using VSD's for the pumps and by setting the maximum flow through the flowmeter. The flowmeter is fitted to the pump delivery pipeline from the sump to the Primary Settlement Tank.

Primary Settlement Tank

The main biological treatment stream consists of a 38m^3 primary settlement tank (PST) where settlement of the effluent takes place, and during this process the biological oxygen demand is partially reduced. The PST is designed to allow solids to settle under gravity and to discharge by gravity to the MBR tank. Periodic de-sludging of this tank is required in order for it to continue to achieve effective removal of solids, this is carried out by operating the WAS pump. This operation is set by a timer in the panel, and the WAS pump will operate for 1 hour every day, (Time to be adjustable at panel)

The plant incorporates a sludge holding tank adequately sized for the storage of waste activated sludge. The WAS pump pumps the excess sludge to the sludge 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 sludge in the tank will be monitored by means of an ultrasonic level sensor. Settled sludge will be removed intermittently from the tank through the Bauer connection by a tanker.

4.1 MBR Tank

The following equipment will be required for the operation of the MBR tank:

2 no. ES200 membrane units

3 no. Float switches

1 no. Permeate outlet Actuated valve

1 no. Backwash Actuated Valve

1 no. RAS Pump

2 no. Blowers

Operation:

The effluent carried forward from the Primary settlement tank is fed into the MBR Tank. A high-high level float switch in the MBR tank when activated will switch off the pumps in the inlet balance tank thus restricting flow through the plant. When this float switch is activated an alarm signal will be sent out.

A high level float switch in the MBR tank when activated will open the permeate outlet valve for a set amount of time (To be set during commissioning, this time will allow the level of the effluent in the tank is to drop by 300mm). Once this

time has elapsed the permeate outlet valve will close, and the level of the effluent will rise again until high level float switch is re-activated.

A low level float switch set at a height just above the membranes when activated will close the permeate outlet valve stop the Ras pump and send out an alarm stating low level in MBR tank.

There are 2 no. blowers used to supply the air for the course bubble aeration for the membrane units. These blowers will operate on a duty standby basis with an automatic changeover every 12 hours. Once this change over is happening, the permeate outlet valve is to close until new duty blower is up to the required speed. The membrane blowers will have 2 set speeds

1. Normal Speed, 240Nm^3/hr (utilised during)
2. Maximum Speed, 360 Nm^3/hr (utilised when carried out using a diffuser purge or a membrane relaxation)

Normal Permeate Operation:

In the normal permeate operation mode the following sequence is maintained:

1) Permeate outlet valve works off the high level float switch
2) Backwash Actuated valve is in the closed position
3) Duty blower at 240Nm^3/hr
4) Inlet pumps as per normal operation.

Air Purge Backwash Operation:

In the air purge backwash operation the following sequence is maintained:

1) Permeate outlet valve (POV001) closes
2) Backwash Actuated (BV001) is energised open
3) Duty blower is ramped up to maximum speed, 360Nm^3/hr
4) Inlet pumps are inhibited while backwash sequence is in operation

The backwash sequence above is to be carried out for 3 minutes everyday. Once the backwash cycle is over, the duty blower is ramped down to 240Nm^3/hr, backwash Actuated valve energised close and the permeate outlet valve and the inlet pumps return to normal operation.

Membrane Relaxation Operation:

In the membrane relaxation operation the following sequence is maintained:

1) Permeate outlet valve (POV001) closes
2) Backwash Actuated (BV001) is in the closed position
3) Duty blower is ramped up to maximum speed, 360Nm^3/hr
4) Inlet pumps are inhibited while membrane relaxation sequence is in operation

The membrane relaxation sequence above is to be carried out for 30 minutes everyday. Once the cycle is over, the duty blower is ramped down to 240Nm^3/hr, the permeate outlet valve and the inlet pumps return to normal operation.

NB: If a duty blower fails, permeate outlet valve is to close immediately and an alarm is to be sent out. Permeate valve only to open once standby lower is operating at normal speed.

RAS Pump

The RAS pump in the MBR tank is to run 24 hours a day. If the low level float switch is activated this will inhibit the RAS pump, until the high level float switch is re-activated.

5.1 Chemical Dosing

Ferric Dosing

The chemical dosing required for treatment will be introduced to the stream at the primary settlement tank via the Ferric Dosing pumps which operate on a duty/standby basis. The dosing pumps are flow proportional and will be controlled by the flowmeter (FM001) on the inlet line from the inlet balance tank pump.

Sodium Hypochlorite Cleaning (Manual Chemical Clean)

The chemical cleaning of the membrane panels in the MBR Tank will be done manually. The permeate outlet valves will be closed, The Sodium Hypochlorite will be admitted into the MBR Panels by opening the valve on the chlorine dosing line. The sodium hypochlorite will then be pumped from an IBC tank & bund brought to site, into the chemical fill lines and will drain into the MBR Panels. Under no circumstances should any other chemical be used in this fill

line without proper cleaning of the line under guidance from the supplier of the chemicals, to avoid any reactions between different chemicals.

Final Effluent

This final effluent prior to discharge to the outfall is subject to outflow measurement and sampling. Another open flume type flowmeter installed on the gravity flow outlet main, provides flow measurement. An ultrasonic level sensor will also be positioned in this flume. An automatic sampling unit provides sampling.

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 Bweeng.

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	**Yes**	**No**
	√	

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.

Type of Discharge	225mm diameter outfall pipe from wastewater treatment plant to percolation area.
Unique	SW – 01 BWNG

Point Code	
Location	WWTP site Beennanweel West
Grid ref (6E, 6N)	150251E 088034N

The primary discharge point, SW-01 Bweeng, is the main outlet from Bweeng Wastewater Treatment Plant. The outlet discharges to a percolation area adjacent to the Cummeen Stream.

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

Attachment included	**Yes**	**No**
		√

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 be submitted via the following web based link: 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

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: 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 D.1(iii)(a) should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

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-01 - BWNG	Primary	Cork County Council	River	Cummen	None	150251	088034

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.

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: http://78.137.160.73/epa_wwd_licensing/.

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: http://78.137.160.73/epa_wwd_licensing/.

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' 18th 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**
		√

E.3. Tabular data on Monitoring and Sampling Points

Applicants should submit the following information for each monitoring and sampling point: E150293 N088061

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW01	Primary	SAMPLING	150293	088061	N
aSW01u	u/s	Sampling	149181	087731	N
aSW01d	d/s	Sampling	151105	086872	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)(l) 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
	√	

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

- 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: http://78.137.160.73/epa_wwd_licensing/. 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, and hydrogeology. The latter must in particular present the aquifer 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.

- 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/EEC[1] 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[2];

  [1]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)

  [2]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 and the collection system has been recently upgraded there are no improvements planned at present for the Bweeng 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 Cummen Stream 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 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 SWRBD has proposed water quality standards for the Cummen Stream under a water quality / catchments management plan. The Cummen Stream is classified as Moderate ecological quality status on the ground of biological quality data.

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 Bweeng Wastewater Treatment Plant cannot cause deterioration in good water quality under the Water Framework Directive at present.

The Cummen Stream is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.200 of 1994. The River Blackwater, into which the Clyda River flows, is also not designated under these regulations. The Cummen Stream is a tributary of the Clyda River.

The Cummen Stream is not designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988, however the River Blackwater which the Clyda River joins, is designated Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988.

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

The Cummen Stream is not a designated Sensitive Area under the Urban Wastewater Treatment Regulations 2001 (S.I. 254 of 2001). The River Blackwater downstream of Mallow Railway to Ballyduff Bridge is a designated Sensitive Area. This is not within 2km of any discharge point from Bweeng Wastewater Treatment wastewater works.

Water is abstracted from the Clyda River (of which the Cummen Stream is a tributary of) at Dromore for Mallow PWS, which is located approximately 17km downstream stream of the discharge point. Bweeng PWS is supplied by a bored well adjacent to the Cummen Stream located upstream of the discharge point.

Mallow PWS Details

Name	Volume	Source Type	Easting	Northing
Mallow PWS abstraction at Dromore	4000m^3/d	River Abstraction	154250	095930

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 Cummen Stream 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 pearl-mussel and otter.

The Blackwater River Site Synopsis is included in this attachment.

Natural Heritage Areas
The Cummen Stream does flow through a Proposed Natural Heritage Areas (NHA). 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.

No designated special protected areas are located along the Cummen Stream. 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 Cummen Stream River was obtained from Cork County Council. The EPA also takes samples from a number of locations along the Cummen Stream and Clyda River These stations are the flowing:

- *Bridge U/S Ahadullane - downstream of the Bweeng WWTP discharge point by approximately 1km*
- *Athnalacka Bridge – downstream of Bweeng WWTP discharge point by approximately 5km*

Table F1-1: Biological Quality Rating for Cummen Stream & Clyda River – Downstream of Discharge

Sampling Location	**EPA Biological Quality Rating (Q values)**		
	1995 -1997	**2001 – 2003**	**Target**
Bridge U/S Ahadullane (Cummen)	4	4	4
Athnalacka Bridge(Clyda)	4	4-5	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	8.25
Suspended Solids (SS)	35	2.5

**Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Mar '09 to May '09.*

a) **<u>Mass Balance Equation for Orthophosphate:</u>**

Median flow of River = 0.43 m^3/sec
Median oPO_4-P in River (upstream) = 0.0775 mg/L

Average volume of discharge = 0.0025 m^3/sec
Median value for oPO_4-P in discharge = 1.23 mg/L

$$C_{final} = \frac{(4.43 \times 0.0775) + (0.0025 \times 1.23)}{0.43 + 0.0025}$$

C_{final} = 0.8mg/L oPO_4-P

The increase in Orthophosphate due to the discharge of the WWTP is 72 μg/L.

b) **Mass Balance Equation for BOD:**

Flow of River (95%) = 0.074m^3/sec
Average BOD in River (upstream) = 2 mg/L

Average volume of discharge = 0.0025 m^3/sec
Average BOD in discharge = 8.25 mg/L

$$C_{final} = \frac{(0.074 \times 2) + (0.0025 \times 8.25)}{0.074 + 0.0025}$$

C_{final} = 2.2 mg/L BOD

The increase in BOD due to the discharge of the WWTP is 0.2 mg/L.

c) **Mass Balance Equation for Suspended Solids:**

Flow of River (95%) = 0.074m^3/sec
Average Suspended Solids in River (upstream) = 3.1mg/L

Average volume of discharge = 0.0025 m^3/sec
Average Suspended Solids in discharge = 2.5 mg/L

$$C_{final} = \frac{(0.074 \times 3.1) + (0.0025 \times 2.5)}{0.074 + 0.0025}$$

C_{final} = 3.08 mg/L Suspended Solids

The increase in Suspended Solids due to the discharge of the WWTP is 0mg/L.

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

50% Median flow of River = 0.43 m^3/sec
Median TPO_4-P in River (upstream) = 0.11 mg/L

Average volume of discharge = 0.0025 m^3/sec
Median TPO_4-P in discharge = 1.56 mg/L

$$C_{final} = \frac{(0.43 \times 0.11) + (0.0025 \times 1.56)}{0.43 + 0.0025}$$

C_{final} = 0.12 mg/L TPO_4-P

The increase in Total Phosphate due to the discharge of the WWTP is 10 μg/L.

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

Flow of River (95%) = 0.074 m^3/sec
Average Total Nitrogen in River (upstream) = 2mg/L

Average volume of discharge = 0.0025 m^3/sec
Average Total Nitrogen in discharge = 8 mg/L

$$C_{final} = \frac{(0.074 \times 2) + (0.0025 \times 8)}{0.074 + 0.0025}$$

C_{final} = 2.2 mg/L Total Nitrogen

The increase in Total Nitrogen due to the discharge of the WWTP is 0.2 mg/L.

f) **Mass Balance Equation for Sulphate:**

Flow of River (95%) = 0.074 m^3/sec
Average Sulphate in River (upstream) = 30 mg/L

Average volume of discharge = 0.0025 m^3/sec
Average Sulphate of discharge = 30 mg/L

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

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

Flow of River (95%) = 0.074 m^3/sec
Average Ammonia-N in River (upstream) = 0.0625 mg/L

Average volume of discharge = 0.0025 m^3/sec
Average Ammonia-N in discharge = 0.65 mg/L

Average Ammonia-N in River (downstream) = 0.0625mg/L

$$C_{final} = \frac{(0.074x\ 0.0625) + (0.0025 \times 0.65)}{0.074 + 0.0025}$$

C_{final} = 0.08 mg/L Ammonia

The increase in Ammonia due to the discharge of the WWTP is 0.0175mg/L.

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

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 Mar 2009 to May 2009.

Table F1-4: Upstream Water Quality

Parameter	**Upstream Monitoring Station**			
	11/02/09	**10/03/09**	**16/04/09**	**07/05/09**
Ph	7.3	7.0	7.2	7.3
BOD	<2	2	2	2
SS	2	2	5.4	3
Ammonia	<0.05	0.05	0.05	0.1
Ortho-Phosphate	0.05	0.16	0.05	0.05

Table F1-5: Downstream Water Quality

Parameter	**Upstream Monitoring Station**			
	11/02/09	**10/03/09**	**16/04/09**	**07/05/09**

Ph	7.2	7.1	7.2	7.4
BOD	<2	2	2	2
SS	2	2	5.6	6
Ammonia	<0.05	0.05	0.05	0.1
Ortho-Phosphate	0.05	0.16	0.06	0.05

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**
	√	

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 Applicable	Mallow PWS	4000 m^3/day	Not Applicable	17km	154250	095930	No

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.

Approximately 17km downstream of the WWTP, Mallow Regional Water Supply abstracts water at Dromore Pumping Station. Approximately 4,000m^3/day is abstracted from the Clyda River and treated at Mallow Water Treatment Plant.

Attachment F.2 should contain any supporting information.

Attachment F.2 includes

- Cryptosporidium Risk Assessment for Mallow Water Treatment Plant
- Agglomeration for Mallow Distribution Network.
- Table F 2

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 Cummen Stream and one along the Clyda River downstream (d/s) of the WWTP. These are located at the following:

- *Br U/S Ahadullane*
- *Athnalacka Bridge*

Table G1-1: Upstream Water Quality

Parameter	**Upstream Monitoring Station**			
	11/02/09	**10/03/09**	**16/04/09**	**07/05/09**
Ph	7.3	7.0	7.2	7.3
BOD	<2	2	2	2
SS	2	2	5.4	3
Ammonia	<0.05	0.05	0.05	0.1
Ortho-Phosphate	0.05	0.16	0.05	0.05

Table G1-2: Downstream Water Quality

Parameter	**Upstream Monitoring Station**			
	11/02/09	**10/03/09**	**16/04/09**	**07/05/09**
Ph	7.2	7.1	7.2	7.4
BOD	<2	2	2	2
SS	2	2	5.6	6
Ammonia	<0.05	0.05	0.05	0.1
Ortho-Phosphate	0.05	0.16	0.06	0.05

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.

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.

No designated special protected areas are located along the Cummen Stream. 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.

Bweeng PWS is the closest PWS that utilise ground water for medium sized water supplies. This is located upstream of the discharge point by approximately 2km.

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

Water is abstracted from the Clyda River for treatment at Mallow Water Supply, the abstraction point is located 17km downstream of the WWTP discharge point.

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 Bweeng 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 2001

Parameter	**Conc. (mg/l)**	**Minimum Percentage of Reduction**
Biochemical Oxygen Demand (BOD)	25	70 - 90
Chemical Oxygen Demand (COD)	125	75
Suspended Solids	35	90

The aeration and clarifying plant at the new Butevant 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 Cummen Stream is not a designated Sensitive Area. The River Blackwater downstream of Mallow Railway Bridge to Ballyduff Bridge is designated a Sensitive Area. This is not within 2km of any discharge point form the Bweeng wastewater treatment works.

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 Cummen Stream is not a designated Shellfish Area under the Shellfish Waters Regulations, S.I. 200 of 1994. The River Blackwater, into which the River Flesk flows (after joining the River Clyda), is also not designated under these regulations.

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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/EEC

The Cummen Stream 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 Bweeng 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
	√	

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 discharges to the Cummen Stream, which flows adjacent to the WWTP site boundary. The Cummen Stream is a tributary of the Clyda River which is a tributary of the Blackwater River (Munster).

The EPA have stations downstream of the discharge point, one number station on the Cummen Stream and further stations along the Clyda River.

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 Bweeng This is evident from Tables 3 &4 below showing the uptake of phosphorus through the wastewater treatment plant.

Table G2-3: Phosphorus Levels in Influent to WWTP

Parameter	Inlet Monitoring Station	
	16/04/09	**07/05/09**
Ortho-Phosphate	0.05	0.05

Table G2-4: Phosphorus Levels in Effluent from WWTP

Parameter	Outlet Monitoring Station	
	09/07	**07/08**
Ortho-Phosphate	0.06	0.05

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**
		√

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 a new WWTP was installed at a cost of €0.5 M and the collection system for the village of Bweeng 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

With these recent improvements to the collection system and 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**
		√

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 Bweeng.

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.

Attachment included	**Yes**	**No**
		√

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.

Signed by :_____ **Date :**_____
(on behalf of the organisation)

Print signature name: _____

Position in organisation:_____

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).

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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.

Signed by : _____ **Date :** 16th June 2009.
(on behalf of the organisation)

Print signature name: TOM STRITCH

Position in organisation: DIRECTOR of SERVICES

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.

Lead Authority

Signed by :_____ **Date :**_____
(on behalf of the organisation)

Print signature name: _____

Position in organisation:_____

Co-Applicants

Signed by :_____ **Date :**_____
(on behalf of the organisation)

Print signature name: _____

Position in organisation:_____

Signed by :_____ **Date :**_____
(on behalf of the organisation)

Print signature name: _____

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.

ANNEX 1: TABLES / ATTACHMENT

Attachment	Description
A1 Map 1	1:50,000 Location Map
A1 Map 2	Site Location of WWTP
A1 Map 3	Wastewater Treatment Plant – Site Layout
B1 Map 4	Agglomeration
B2 Map 5	Layout of Waste Water Treatment Plant
B3 Map 6	Location of Primary Discharge Point SW01 BWNG
B3 Map 7	Location of Sampling Points
B4	Not Applicable
B5	Not Applicable
B6	Not Applicable
B7	Not Applicable
B8 Map 8	Location of Site Notice
B8	Notice & Advertisement
B10	Not Applicable
B 11	Not Applicable
B 12	Not Applicable
C1 Map 9	Layout Wastewater Treatment Plant
C1 Drg 1	Schematic of Wastewater Treatment Plant
C2	Not Applicable
D1	Not Applicable
Section D2	Discharge Points
E2	Not Applicable
Section E3	Monitoring & Sampling Points
E4	Sampling Results
F1	Draft River basin Management Plan for the SWRBD Laboratory Test Results SAC Blackwater River Site Synopsis
F2 Map 10	Agglomeration Map for Mallow Water Supply Network
F2	Mallow Water Abstraction Results Mallow Cryptosporidium Risk Assessment Abstraction Points
G1	SAC Blackwater River Site Synopsis
G2	Not Applicable
G3	Not Applicable
G4	Not Applicable

Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Bweeng
Population Equivalent	990
Level of Treatment	Tertiary
Treatment plant address	Beennanweel, Bweeng, Mallow, Co. Cork
Grid Ref (12 digits, 6E, 6N)	150293 / 088061
EPA Reference No:	

Contact details

Contact Name:	Frank Cronin
Contact Address:	Water Services Section Cork County Council Northern Division Annabella Mallow Co Cork
Contact Number:	022-21123
Contact Fax:	022-21983
Contact Email:	Frank.cronin@corkcoco.ie

Table D.1(i)(a): EMISSIONS TO SURFACE/GROUND WATERS (Primary Discharge Point)

Discharge Point Code: SW-1

Local Authority Ref No:	SW-01 BWNG	
Source of Emission:	Bweeng Wastewater Treatment Plant	
Location:	Beennanweel, Bweeng	
Grid Ref (12 digits, 6E, 6N)	150251 / 088034	
Name of Receiving waters:	Cummen Stream	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	none	
Flow Rate in Receiving Waters:	0	$m^3.sec^{-1}$ Dry Weather Flow
	0	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	no data available on flow	

Emission Details:

(i) Volume emitted			
Normal/day	220 m^3	Maximum/day	660 m^3
Maximum rate/hour	27.5 m^3	Period of emission (avg)	365 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.0025 m^3/sec		

Table D.1(i)(b): EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	24 hr composite	= 9	
Temperature	°C	24 hr composite	= 30	
Electrical Conductivity (@ 25°C)	µS/cm	24 hr composite	= 1000	
Suspended Solids	mg/l	24 hr composite	= 35	23.1
Ammonia (as N)	mg/l	24 hr composite	= 0	0
Biochemical Oxygen Demand	mg/l	24 hr composite	= 25	16.5
Chemical Oxygen Demand	mg/l	24 hr composite	= 125	82.5
Total Nitrogen (as N)	mg/l	24 hr composite	= 15	10
Nitrite (as N)	mg/l	24 hr composite	= 0	0
Nitrate (as N)	mg/l	24 hr composite	= 0	0
Total Phosphorous (as P)	mg/l	24 hr composite	= 2	1.3
OrthoPhosphate (as P)	mg/l	24 hr composite	= 1.7	1.1
Sulphate (SO_4)	mg/l	24 hr composite	= 0	0
Phenols (Sum)	µg/l	24 hr composite	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent

Table D.1(i)(c): DANGEROUS SUBSTANCE EMISSIONS TO SURFACE/GROUND WATERS - Characteristics of The Emission (Primary Discharge Point)

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
Atrazine	µg/l	24 hr composite	= 0	0
Dichloromethane	µg/l	24 hr composite	= 0	0
Simazine	µg/l	24 hr composite	= 0	0
Toluene	µg/l	24 hr composite	= 0	0
Tributyltin	µg/l	24 hr composite	= 0	0
Xylenes	µg/l	24 hr composite	= 0	0
Arsenic	µg/l	24 hr composite	= 0	0
Chromium	µg/l	24 hr composite	= 0	0
Copper	µg/l	24 hr composite	= 0	0
Cyanide	µg/l	24 hr composite	= 0	0
Flouride	µg/l	24 hr composite	= 0	0
Lead	µg/l	24 hr composite	= 0	0
Nickel	µg/l	24 hr composite	= 0	0
Zinc	µg/l	24 hr composite	= 0	0
Boron	µg/l	24 hr composite	= 0	0
Cadmium	µg/l	24 hr composite	= 0	0
Mercury	µg/l	24 hr composite	= 0	0
Selenium	µg/l	24 hr composite	= 0	0
Barium	µg/l	24 hr composite	= 0	0

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE E.1(i): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Primary and Secondary Discharge Points

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)
SW-1	365	80300

TABLE E.1(ii): WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – Storm Water Overflows

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)	Complies with Definition of Storm Water Overflow

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	151105 / 086872

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	11/02/09	10/03/09	16/04/09			
pH		= 7.2	= 7.1	= 7.2	Grab	2	Electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 142	= 141	= 127	Grab	0.5	Electrochemical
Suspended Solids		= 2	= 2	= 5.6	Grab	0.5	Gravimetric
Ammonia (as N)		= 0.05	= 0.05	= 0.05	Grab	0.02	Colorimetric
Biochemical Oxygen Demand		= 2	= 2	= 2	Grab	0.06	Electrochemical
Chemical Oxygen Demand		= 7	= 5	= 16	Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as $CaCO_3$)	= 0				Grab	0	Titimetric
Total Nitrogen (as N)		= 2	= 1.8	= 1	Grab	0.5	Digestion & Colorimetric
Nitrite (as N)					Grab	0.013	Colorimetric
Nitrate (as N)					Grab	0.04	Colorimetric
Total Phosphorous (as P)		= 0.06	= 0.06	= 0.06	Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		= 0.05	= 0.05	= 0.06	Grab	0.02	Colorimetric
Sulphate (SO_4)					Grab	30	Turbidimetric
Phenols (Sum)					Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	default setting of 01/01/09 and 0 used in lcations where results are not available

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	07/05/09						
pH	= 7.4				Grab	2	Electrochemical
Temperature					Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)	= 130				Grab	0.5	Electrochemical
Suspended Solids	= 6				Grab	0.5	Gravimetric
Ammonia (as N)	= 0.05				Grab	0.02	Colorimetric
Biochemical Oxygen Demand	= 2				Grab	0.06	Electrochemical
Chemical Oxygen Demand	< 21				Grab	8	Digestion & Colorimetric
Dissolved Oxygen					Grab	0	ISE
Hardness (as $CaCO_3$)					Grab	0	Titimetric
Total Nitrogen (as N)	= 2.59				Grab	0.5	Digestion & Colorimetric
Nitrite (as N)	< 0.1				Grab	0.013	Colorimetric
Nitrate (as N)	= 2.21				Grab	0.04	Colorimetric
Total Phosphorous (as P)	= 0.05				Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)	= 0.05				Grab	0.02	Colorimetric
Sulphate (SO_4)	< 30				Grab	30	Turbidimetric
Phenols (Sum)	< 0.1				Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	default setting of 01/01/09 and 0 used in locations where results are not available

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	151105 / 086872

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	11/02/09	10/03/09	16/04/09			
Atrazine					Grab	0.96	HPLC
Dichloromethane					Grab	1	GC-MS1
Simazine					Grab	0.01	HPLC
Toluene					Grab	0.02	GC-MS1
Tributyltin	= 0				Grab	0.02	GC-MS1
Xylenes					Grab	1	GC-MS1
Arsenic					Grab	0.96	ICP-MS
Chromium		< 20	< 20	< 20	Grab	20	ICP-OES
Copper		< 20	< 20	< 20	Grab	20	ICP-OES
Cyanide					Grab	5	Colorimetric
Flouride					Grab	100	ISE
Lead		< 20	< 20	< 20	Grab	20	ICP-OES
Nickel		< 20	< 20	< 20	Grab	20	ICP-OES
Zinc		< 20	< 20	< 20	Grab	20	ICP-OES
Boron		< 20	< 20	= 34.9	Grab	20	ICP-OES
Cadmium		< 20	< 20	< 20	Grab	20	ICP-OES
Mercury					Grab	0.2	ICP-MS
Selenium					Grab	0.74	ICP-MS
Barium		< 20	< 20	< 20	Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	07/05/09						
Atrazine	< 0.01				Grab	0.96	HPLC
Dichloromethane	< 1				Grab	1	GC-MS1
Simazine	< 0.01				Grab	0.01	HPLC
Toluene	< 0.28				Grab	0.02	GC-MS1
Tributyltin					Grab	0.02	GC-MS1
Xylenes	< 1				Grab	1	GC-MS1
Arsenic	< 0.96				Grab	0.96	ICP-MS
Chromium	< 20				Grab	20	ICP-OES
Copper	= 58.92				Grab	20	ICP-OES
Cyanide	< 5				Grab	5	Colorimetric
Flouride	< 100				Grab	100	ISE
Lead	< 20				Grab	20	ICP-OES
Nickel	< 20				Grab	20	ICP-OES
Zinc	= 30.66				Grab	20	ICP-OES
Boron	< 20				Grab	20	ICP-OES
Cadmium	< 20				Grab	20	ICP-OES
Mercury	< 0.2				Grab	0.2	ICP-MS
Selenium	< 0.74				Grab	0.74	ICP-MS
Barium	< 40.435				Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required

TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	149181 / 087731

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	11/02/09	10/03/09	16/04/09			
pH		= 7.3	= 7	= 7.2	Grab	2	Electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 134	= 132	= 118	Grab	0.5	Electrochemical
Suspended Solids		= 2	< 2	= 5.4	Grab	0.5	Gravimetric
Ammonia (as N)		< 0.05	< 0.05	< 0.05	Grab	0.02	Colorimetric
Biochemical Oxygen Demand		< 2	< 2	< 2	Grab	0.06	Electrochemical
Chemical Oxygen Demand		< 5	= 17	= 22	Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as $CaCO_3$)	= 0				Grab	0	Titimetric
Total Nitrogen (as N)		= 3	= 1.7	= 1	Grab	0.5	Digestion & Colorimetric
Nitrite (as N)					Grab	0.013	Colorimetric
Nitrate (as N)					Grab	0.04	Colorimetric
Total Phosphorous (as P)		= 0.06	= 0.23	= 0.1	Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		< 0.05	= 0.16	< 0.05	Grab	0.02	Colorimetric
Sulphate (SO_4)					Grab	30	Turbidimetric
Phenols (Sum)					Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

Additional Comments:	default setting of 01/01/09 and 0 used in locations where results are not available

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	07/05/09						
pH	= 7.3				Grab	2	Electrochemical
Temperature					Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)	= 117				Grab	0.5	Electrochemical
Suspended Solids	= 3				Grab	0.5	Gravimetric
Ammonia (as N)	< 0.1				Grab	0.02	Colorimetric
Biochemical Oxygen Demand	= 2				Grab	0.06	Electrochemical
Chemical Oxygen Demand	< 21				Grab	8	Digestion & Colorimetric
Dissolved Oxygen					Grab	0	ISE
Hardness (as $CaCO_3$)					Grab	0	Titimetric
Total Nitrogen (as N)	= 2.32				Grab	0.5	Digestion & Colorimetric
Nitrite (as N)	< 0.1				Grab	0.013	Colorimetric
Nitrate (as N)	= 2.38				Grab	0.04	Colorimetric
Total Phosphorous (as P)	< 0.05				Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)	< 0.05				Grab	0.02	Colorimetric
Sulphate (SO_4)	< 30				Grab	30	Turbidimetric
Phenols (Sum)	< 0.1				Grab	0.1	GC-MS2

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper
For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent

Additional Comments:	default setting of 01/01/09 and 0 used in locations where results are not available

TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	149181 / 087731

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	11/02/09	10/03/09	16/04/09			
Atrazine					Grab	0.96	HPLC
Dichloromethane					Grab	1	GC-MS1
Simazine					Grab	0.01	HPLC
Toluene					Grab	0.02	GC-MS1
Tributyltin	= 0				Grab	0.02	GC-MS1
Xylenes					Grab	1	GC-MS1
Arsenic					Grab	0.96	ICP-MS
Chromium		< 20	< 20	< 20	Grab	20	ICP-OES
Copper		< 20	< 20	< 20	Grab	20	ICP-OES
Cyanide					Grab	5	Colorimetric
Flouride					Grab	100	ISE
Lead		< 20	< 20	< 20	Grab	20	ICP-OES
Nickel		< 20	< 20	< 20	Grab	20	ICP-OES
Zinc		< 20	< 20	< 20	Grab	20	ICP-OES
Boron		< 20	< 20	< 20	Grab	20	ICP-OES
Cadmium		< 20	< 20	< 20	Grab	20	ICP-OES
Mercury					Grab	0.2	ICP-MS
Selenium					Grab	0.74	ICP-MS
Barium		< 20	< 20	< 20	Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	07/05/09						
Atrazine	< 0.1				Grab	0.96	HPLC
Dichloromethane	< 1				Grab	1	GC-MS1
Simazine	< 0.1				Grab	0.01	HPLC
Toluene	< 0.28				Grab	0.02	GC-MS1
Tributyltin					Grab	0.02	GC-MS1
Xylenes	< 1				Grab	1	GC-MS1
Arsenic	< 0.96				Grab	0.96	ICP-MS
Chromium	< 20				Grab	20	ICP-OES
Copper	< 20				Grab	20	ICP-OES
Cyanide	< 5				Grab	5	Colorimetric
Flouride	< 100				Grab	100	ISE
Lead	< 20				Grab	20	ICP-OES
Nickel	< 20				Grab	20	ICP-OES
Zinc	< 20				Grab	20	ICP-OES
Boron	< 20				Grab	20	ICP-OES
Cadmium	< 20				Grab	20	ICP-OES
Mercury	< 0.2				Grab	0.2	ICP-MS
Selenium	< 0.74				Grab	0.74	ICP-MS
Barium	= 42.82				Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required

Annex 2: Check List For Regulation 16 Compliance

Regulation 16 of the waste water discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007) sets out the information which must, in all cases, accompany a discharge licence application. In order to ensure that the application fully complies with the legal requirements of regulation 16 of the 2007 Regulations, all applicants should complete the following.

In each case, refer to the attachment number(s), of your application which contains(s) the information requested in the appropiate sub-article.

Regulation 16(1) In the case of an application for a waste water discharge licence, the application shall -		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	B1	Yes
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,	Not Applicable	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates,	B2	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	B9(I)	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	C, D	Yes
(f)	give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge.	F1	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	E3	Yes
(h)	in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	E4	Yes
(i)	describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges,	Not Applicable	Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	F1	Yes
(k)	give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges,	E1	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	E4	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	Not Applicable	Yes
(n)	Any other information as may be stipulated by the Agency.	Not Applicable	Yes
Regulation 16(3) Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -		**Attachment Number**	**Checked by Applicant**
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	B8	Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	Not Applicable	Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -	B	Yes
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	B3	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	E3	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	B9(III)	Yes

Regulation 16(4) An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		Attachment Number	Checked by Applicant
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agancy.		Yes
Regulation 16(5) **For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.**		**Attachment Number**	**Checked by Applicant**
1	Signed original.		Yes
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		Yes
3	1 CD of geo-referenced digital files provided.		Yes
Regulation 17 **Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency**		**Attachment Number**	**Checked by Applicant**
1	EIA provided if applicable		Yes
2	2 hardcopies of EIS provided if applicable.		Yes
3	2 CD versions of EIS, as PDF files, provided.		Yes