Comhairle Contae Chorcaí
Cork County Council

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

To : Environmental Protection Agency,
Johnstown Castle.

19th September, 2008

Re : Waste Water Discharge Licence Application for the Agglomeration of **Watergrasshill.**

Dear Sir/Madam,

Please find enclosed Cork Co Council's Waste Water Discharge Licence Application for the Agglomeration of **Watergrasshill.**

The following documentation is enclosed:

- 1 No. signed original in hardcopy
- 1 No. copy in hardcopy
- 2 No. CD-ROM with all documentation in electronic searchable PDF (OCR'd format)
- 2 No. CD-ROM with Autocad, Excel Data, Table D.2, Table E.3 and Table F.2

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

Signed :

**Thomas G. Stritch,**
**DIRECTOR OF SERVICES (Northern Division)**

Comhairle Contae Chorcaí
Cork County Council

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Mallow,
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Suíomh Gréasáin: www.corkcoco.ie

Maire Buckley,
Programme Officer,
Environmental Protection Agency,
Regional Inspectorate,
Inniscarra,
Co. Cork.

10th November 2008



**RE: Watergrasshill WWTP Discharge Licence**

Dear Ms Buckley,

Please find attached 2 nr CD, with the amended electronic copies which are a true version of the original application.

Please revert if you require any further information or clarification,

Regards,



Frank Cronin,
Senior Engineer – Water Services

Email: Frank.cronin@corkcoco.ie
Direct Line: 022-30432

**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'.<br><br>Amend wording of Checklist in Annex to reflect wording of Regulation 16(5) of S.I. No. 684 of 2007.<br><br>Inclusion of unique point code for each point of discharge and storm water overflow. | To accurately reflect the information required<br><br>To accurately reflect the Regulations and to obtain the application documentation in appropriate format.<br><br>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.<br><br>Amend wording of Section B.7. (iii) to reflect the title of Water Services Authority.<br><br>Addition of new Section B.9 (ii) in order to obtain information on developments yet to contribute to the waste water works.<br><br>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.<br><br>Amend Section D.1 to include a requirement for monitoring data for influent | To accurately determine the agglomeration to be licensed.<br><br>To accurately reflect the Water Services Act, 2007.<br><br>To obtain accurate population equivalent figures for the agglomeration.<br><br>To obtain accurate information on design and spill frequency from these structures.<br><br>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.<br>Amend wording of Section E.1 to request information on composite sampling/flow monitoring provisions. | the plant.<br>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.<br><br>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.<br><br>Amended requirements for reporting on discharges under E.1 Waste Water Discharge Frequency and Quantities.<br><br>Amendment to Section F.1 to specify the type of monitoring and reporting required for the background environment.<br><br>Removal of Annexes to application form. | To clarify the reporting requirements.<br><br>To streamline reporting requirements.<br><br>To clarify the reporting requirements for ambient monitoring.<br><br>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 Waste Water Works and the Activities Carried Out Therein

Watergrasshill village is situated on the R639, formerly the N8, just 14km north of Cork City and 8km south of Rathcormack village.

The wastewater in Watergrasshill is collected in a partially combined foul and separate foul sewerage drainage network. A fully separate storm water system is constructed for the village. Due to the topography of the village a number of pumping stations are located within the village. The Wastewater Treatment Plant site is located approximately 800m northeast of Watergrasshill village in the townland of Meenane. Access to the wastewater treatment plant is via an underpass under the N8 dual carriageway with a height restriction of 3.6m. The site is approximately 0.2 hectare in area.

Wastewater is pumped from two pumping stations which are located in private housing schemes in Mitchelfort townland to the sewer main artery along the main street through the village. The partially separate collection system gravitates from the village to the treatment plant. A new sewer main was recently laid from the school along the new bypass road to the new treatment plant. The new treatment plant was commissioned in 2002 with a design capacity of 3000 PE and currently serves approximately 1600PE.

On entering the plant, an automatic screen firstly removes screenings from the influent at the inlet works. The sewage then enters the pump sump from where it is forwarded to the circular aeration tank (Ø 7.8m). Following the aeration process the effluent enters the 5.3m diameter settling tank. 2 No. 1m diameter sand filtering tanks further treat the effluent after the settling tank. These filters are automatically backwashed by clear effluent when they clog up. From the sand filters the effluent enters the outlet sump. The final effluent is then discharged from the outlet sump via a 300mm Ø outfall pipe to the River Flesk.



Influent in excess of 3DWF overflow to the old treatment works on site prior to discharge to the adjacent river. The old treatment works consists of an Imhoff tank followed by Percolating Filters. The overflow effluent from the percolating filters is discharged to the Rviver Flesk via a 225mmØ outfall pipe.

Sludge is returned from the clarifier to the aeration tank while surplus sludge is forwarded to a small open tank at present for desludging as required. Ferric dosing is in place for phosphorus removal. Cork County Council has recently appointed a contractor for the provision of a Picket Fence Thickener.

Watergrasshill WWTP is operated by Cork County Council. The plant is operated by a caretaker who 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 Watergrasshill agglomeration arises from the following areas:

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

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

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

The final effluent is discharged to the River Flesk. At design capacity the WWTP will discharge 2,142m3/d.

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

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

The treatment works consists of the following elements:

- Inlet Works
- Forward Feed Sump
- Aeration Tank
- Settling Tank
- 2 Nr Sand Filters
- Outfall to Flesk River

***Techniques***
The 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 new Picket Fence Thickener (PFT) is due to be constructed and commissioned for the WWTP. The PFT shall be 6.9m ∅ by 4m high and shall have a capacity of 105m$^3$, which equates to 4 weeks storage of sludge.

The most recent upgrade at the plant was the installation of a 6mm automatic screen at the inlet works.

The recent upgrading of the plant in 2000 and the additional works planned shall ensure that the basic obligations of the operator are being adhered to.

**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 Inniscarra takes samples from the River Flesk upstream and downstream of the wastewater treatment plant approximately 6 times per year. Samples of the influent and effluent are also taken at these times.

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). The River Flesk is to have a number of operational monitoring sites under this monitoring programme.

List of Attachments include the following:

- Location Map Scale 1:50,000 Attachment A1 Map 1
- Site Location Map of WWTP & Pumping Station 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:** | Watergrasshill & 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*:** | Flannan Groarke |
| **Address:** | Cork County Council |
| | Courthouse |
| | Fermoy |
| | Co. Cork |
| **Grid ref (6E, 6N)** | 177230E, 085396N |
| **Level of Treatment** | Tertiary |
| **Primary Telephone:** | 025 31497 |
| **Fax:** | 025 32331 |
| **e-mail:** | Flannan.groarke@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** | 300mm diameter outfall pipe from wastewater treatment plant. Open Pipe |
| **Unique Point Code** | SW 1 – WGH |
| **Location** | WWTP Site at Meenane, Watergrasshill |
| **Grid ref (6E, 6N)** | 177230E, 085422N |

**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** | 225mm diameter outfall pipe from old percolating filters. Open Pipe |
| **Unique Point Code** | SW 2 - WGH |
| **Location** | WWTP Site at Meenane, Watergrasshill |
| **Grid ref (6E, 6N)** | 177253E, 085407N |

**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:** | planninginfor@corkcoco.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 |
| | Gouldshill |
| | 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** | **3000** |
| **Data Compiled (Year)** | **2008** |
| **Method** | **Census Data** |



## 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 Watergrasshill WWTP is 1800 which based on DWF being measured magnetic meter recording the pumped flow to the plant.

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 at 400. There are currently no planning permissions granted in relation no non domestic activities.

At present Watergrasshill Wastewater Treatment Plant, is operating at approximately half its potential capacity. Therefore the plant has adequate capacity to accommodate the extra hydraulic and organic loading without posing additional environmental risk to the receiving habitat.

### 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 €) |
|---|---|
| | €25,000 |

| 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.



Upgrade Works

Approval has given for the construction and commissioning of a Picket Fence Thickener (PFT) for the WWTP. Construction works are due to commence in late 2008. The PFT shall be 6.9m Ø by 4m high and shall have a capacity of 105m$^3$, which equates to 4 weeks storage of sludge.

The works shall be funded by Council finances.

It is envisaged that works shall be completed within six months of commencement, therefore it is estimated that the new Picket Fence Thickener shall be operational for June 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.

**Not Applicable**

There was no Section 63 notice issued by the Environmental Protection Agency to Cork County Council in relation to the wastewater treatment works in Watergrasshill 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.

**Not Applicable**

Watergrasshill Wastewater Works does not require a Foreshore Act Licence 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.

Watergrasshill Wastewater Treatment Works was constructed adjacent to the old treatment plant, 850m north of the village centre off the R639. The area of the site is approximately 0.2 hectares.

The influent flows by gravity from the village to the treatment plant.

The plant has the hydraulic design capacity to treat wastewater discharges from up to 3,000 population equivalent.

The design dry weather flow (DWF) for the plant is 600 $m^3$/day, which is based on a population equivalent of 3,000 contributing 200 l/head/day. This equates to an average flow of 25 $m^3$/hr. The current PE being served by the WWTP is 1600, which equates to a DWF of 320 $m^3$/day.

The following drawings, showing the locations of the treatment plant and discharge point, along with a schematic plan of the plant are included in the attachment.



*Table C1-1: Table of Attachments*

| Item | Title | Attachment. No. |
|---|---|---|
| 1 | 1/2,500 Wastewater Treatment Plant Site Plan | C1-Map 9 |
| 2 | Schematic Showing Treatment Plant Processes | C1-Drg1 |

### 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.

There are no storm overflows, other than the primary and secondary overflows identified.

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.

**General Description of the Plant**

The plant as installed is based on the extended air aeration activated sludge process using a variable volume aeration tank. The tank is sized to accommodate an additional 6DWF for 3 hours. This omits the need for a separate storm water holding tank and also allows a balanced forward flow to the clarifier. The plant is sized to a 3000 population equivalent (PE).Also fitted in the plant is a tertiary filter, in order to achieve the required 10/10 mg/l BOD/SS standard required. The plant operates as follows:



1. The incoming sewage enters the plant at the Inlet works where it first splits into the 2No. Grit traps. These acts to allow any grit present in the incoming flow to the plant to settle out to the bottom of the traps. The grit which builds up at the bottom of the traps can be removed from the trap by means of pipe connections at the bottom of the traps for disposal offsite.

2. The sewage then enters the Screen chamber where the sewage is screened by a Haigh 741 Automatic Screen unit which was retro fitted to the plant in 2007.

3. The sewage then flows from the screening chamber into the Inlet pump sump where the screened sewage is collected and then pumped up in the aeration tank by means of 2No. Inlet pumps (Homa TP70M 31/4 D EX). These pumps are controlled by means of an ultrasonic level sensor fitted in the pump sump. This sump is fitted with an overflow pipe to allow flows in excess of the pump capacity to overflow out of the sump.

4. The sewage is then aerated in the aeration tank by means of a floating surface aerator. This surface aerator is powered by means of a variable drive control of which is determined by prevailing Dissolved Oxygen levels in the aeration tank. This level is sensed by a D.O. probe fitted to the aeration tank. The return activated sludge is also returned to the aeration tank via the return sludge pump to enable the treatment process to take place in the aeration tank. A waste sludge pump is also fitted to the same line in order to waste sludge.

5. The transfer pumps (Homa MX2436-NU26) draw the mixed liquor off of the aeration tank and pump it into the centre feed pipe of the clarifier.

6. The sludge settles in the clarifier and is removed by the scraper bridge. This bridge scrapes the sludge from the bottom of the tank into the hopper for removal. The Return Sludge pump returns the sludge to the aeration tank.

7. The clarified effluent overflows the weirs of the settling tank and gravitates to the sand filters which act to polish the effluent to ensure it meets the 10/10 mg/l BOD/SS standard for the effluent before it enters the outlet sump.

8. The final effluent overflows to the adjacent stream from the outlet sump. The Filter pumps (Homa V2445 N64) backwash the sand filters with final effluent. Pumped from the outlet sump and they are controlled by an ultrasonic probe fitted to this sump.

9. The final effluent is discharged via a 300mm diameter concrte open pipe to the River Flesk which is adjacent to the site.

## Components of the WWTP

### 1. Inlet Pumps

| | |
|---|---|
| Number: | 2 (Duty/ Standby) |
| Type: | Homa TP70M 31/4 D EX |
| Capacity: | 22 l/sec |
| Total Head: | 7.5m |
| Motor: | 3.0kW |
| Speed: | 1450rpm |
| Weight: | 66kg |



The pumps are controlled from an ultrasonic level probe fitted in the pump sump.

### 2. Automatic Screen

| | |
|---|---|
| Number: | 1No. Duty |
| Type: | Haigh Ace 741 |
| Capacity: | 65 l/sec |
| Electrical | IP68 Rated |

This unit was retro fitted to the plant in 2007

## 3. Surface Aerator

| | |
|---|---|
| Number: | 1No. |
| Type: | EPS 11kW Surface Aerator |
| Motor: | 11.0kW |
| Speed: | 60rpm |

The surface aerator is powered from a variable speed drive to enable its speed to be varied depending on the D.O. level detected by the D.O probe. This surface aerator is driven by a Flender Helical agitator Gearbox DF121KA (160) Ratio 24.81 RPM60 Service factor 2.26 c/w WEG 11kW 4pl, 400V, 3ph, 50Hz, sealed to IP65 totally enclosed fan cooled electrical motor. The E.P.S. Surface aerator has been developed from the original concept of a surface aerator. The basic requirement was for a paddle or a turbine on a vertical axis to rotate slightly immersed at the liquid surface to lift the liquid below and throw it out in a radical pattern across the liquid surface and set up a mixing cycle. The moving blade entrains air in the liquid, providing oxygen transfer efficiency of 2.25 kgO2/hr under standard test conditions at maximum immersion. The E.P.S. aerator consists essentially of a motor, gearbox, base plate, coupling, shaft and impeller. The impeller consists of a deflector fabricated in Mild steel to which are welded profiled blades. The complete unit is balanced both statically and dynamically to ensure vibration free operation.



## 4. Transfer Pumps

| | |
|---|---|
| Number: | 2No. |
| Type: | Homa MX2436-NU26 |
| Capacity: | 19.5 l/sec |
| Total Head: | 2.25m |
| Motor: | 2.3kW |
| Speed: | 960rpm |
| Weight: | 107kg |

These pumps pump the mixed liquor from the aeration tank to the clarifier. They are powered from a variable speed drive in order to allow their speed to be varied which will allow their flow rate to be varied.

## 5. Clarifier Drive

| | |
|---|---|
| Number: | 1No. |
| Type: | MRV 100 |

| | |
|---|---|
| Motor: | 0.55kW |
| Speed: | 1.6rpm |

**6. Sludge Return Pump**

| | |
|---|---|
| Number: | 1No. |
| Type: | Homa MX 2436-NU26 |
| Capacity: | 12.0 l/sec |
| Total Head: | 3.0m |
| Motor: | 2.3kW |
| Speed: | 960rpm |
| Weight: | 107kg |

This pump is powered from a variable speed drive in order to allow its speed to be varied which will allow the rate of sludge return to be varied depending on operational circumstances.



**7. Waste Sludge Pump**

| | |
|---|---|
| Number: | 1No. |
| Type: | Homa MX2436-NU26 |
| Capacity: | 12.0 l/sec |
| Total Head: | 3.0m |
| Motor: | 2.3kW |
| Speed: | 960rpm |
| Weight: | 107kg |

This pump is used to pump excess sludge to the sludge storage tank for later disposal offsite.

**8. Filter Pumps**

| | |
|---|---|
| Number: | 2No. |
| Type: | Homa V-2445-N64 |
| Capacity: | 38.0 l/sec |

| | |
|---|---|
| Total Head: | 6.0m |
| Motor: | 7.5kW |
| Speed: | 1450rpm |
| Weight: | 118kg |

These pumps are used to back wash the sand filters by pumping final effluent from the outlet sump back through the sand filters.

## 9. Ferric Tank

| | |
|---|---|
| Number: | 1No. |
| Type: | Niplast 8000 litre Safe bulk for Ferric Sulphate |

This tank is used to store the Ferric Sulphate that is dosed into the process to achieve chemical phosphate removal.

## 10.Ferric Dosing Pump

| | |
|---|---|
| Number: | 2No. |
| Type: | Prominent Beta BT4A0413PPB200AA010000 |
| Capacity: | 12.3 l /hr |
| Pressure: | 4 bar |
| Motor: | 17W |

These pump are used to dose the Ferric sulphate in to the process for Phosphate removal.



## 11.ELECTRICAL PANEL

This contains the variable speed drives, circuit breakers, electrical switchgear and instrumentation associated with providing power and control to the plant. As well as containing information on the electrical panel this section also contains the information on the Ultrasonic level detectors (Milltronics), the Danfoss Flowmeters, the Danfoss Variable speed drives, the Mitsubishi PLC, the Danfoss D.O. probe and the Danfoss datalogger.

## 12. Portable Water Sampler

| | |
|---|---|
| Number: | 1No. |
| Type: | Watersam WS Porti 1 S |

This sampler is able to provide a time, volume and event proportional. The samples are taken automatically using a pressure/vacuum pump capable of drawing water from depths of uo to 7 meters. The required sample volume is drawn into a dosing vessel from which, after disposal of any excess, it is released into either single or composite sample bottles.

**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.



*Primary Discharge Point, SW01-Watergrasshill*

| | |
|---|---|
| **Type of Discharge** | 300mm concrete diameter outfall pipe from wastewater treatment plant. Open Pipe |
| **Unique Point Code** | SW01-WGH |
| **Location** | Approximately 850m north of the village centre, off the R639, at the WWTP Site |
| **Grid ref (6E, 6N)** | 177230E, 085422N |

The primary discharge point, SW01-Watergrasshill, is the main outlet from Watergrasshill Wastewater Treatment Plant. The outfall runs in an eastern direction approximately 40m from the outlet manhole across to the river. The point of discharge is a 300mm concrete open pipe, which discharges to an open drain of length of 3m prior to discharge to the river

*Secondary Discharge Point, SW02-Watergrasshill*

| | |
|---|---|
| **Type of Discharge** | 225mm concrete diameter overflow pipe from inlet works of the wastewater treatment plant. Open Pipe |
| **Unique Point Code** | SW02-Watergrasshill |
| **Location** | Approximately 850m north of the village centre, off the R639, at the WWTP Site |
| **Grid ref (6E, 6N)** | 177253E, 085407N |

The secondary discharge point, SW02-Watergrasshill, is a 225mm diameter concrete overflow pipe from the old percolating filters at the wastewater treatment plant. The outfall runs in an eastern direction approximately 10m to the river. The point of discharge is an open pipe.

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

| **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 1-WGH | Primary | Cork County Council | River | River Flesk | - | 177230 | 085422 |
| SW 2 - WGH | Secondary | Cork County Council | River | River Flesk | - | 177253 | 085407 |

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.

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:

| PT_CD | PT_TYPE | MON_TYPE | EASTING | NORTHING | VERIFIED |
|---|---|---|---|---|---|
| SW01 | Primary | Sampling | 177238 | 085433 | N |
| aSW01u | u/s | Sampling | 177291 | 085357 | N |
| aSW01d | d/s | Sampling | 177236 | 085516 | 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.**

| **Attachment included** | **Yes** | **No** |
|---|---|---|
| | √ | |

The plant is performing satisfactorily at present and operating within the requirements of the following legislation. There are no improvements planned at present for the Watergrasshill Wastewater Treatment Plant, other than the installation of the Picket Fence Thickener.

***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 River Flesk 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 have yet to set water quality standards for the River Flesk under a water quality or catchments management plan. 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 Watergrasshill Wastewater Treatment Plant cannot cause deterioration in good water quality under the Water Framework Directive at present.

The River Flesk is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.200 of 1994. The River Bride, into which the River Flesk flows, is also not designated under these regulations.

The River Flesk is not designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988, however the River Bride and River Blackwater are designated Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988.

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

The River Flesk 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 Watergrasshill Watewater Treatment wastewater works.

Water is abstracted at west of Bridesbridge village in the townland of Deerpark, by Conna Regional Water Supply. Approximately 1136m$^3$/d is abstracted form the River Bride.



***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, the, including the 3km downstream of discharge area along the River Flesk 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 River Flesk 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 River Flesk does not flow through any 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 River Flesk. There are areas of the River Blackwater that are designated SPAs, however these are located downstream of Fermoy and therefore greater than 2km from all discharge points.

***Receiving Water Quality Requirement***

Water Quality analysis data for the River Flesk was obtained from Cork County Council. The EPA also takes samples from three locations along the River Flesk in the vicinity of the treatment plant. These are located 0.35km downstream of the plant at Condonstown Bridge (d/s of plant), 2.3km downstream at Ballinallig Bridge (d/s of plant), Ballyglissane Bridge 5.35 d/s of plant and at the Br upstream of the confluence of the Flesk and River Bride, approximatlet 9km d/s of plant.



*Table F1-1: Biological Quality Rating for River Flesk – Downstream of Discharge*

| **Sampling Location** | **EPA Biological Quality Rating (Q values)** | | | |
|---|---|---|---|---|
| | **1995 -1997** | **2001 – 2003** | **2006** | **Target** |
| Condonstown Bridge | 3 | 3 | 3 | 3-4 |
| Ballinallig Bridge | 4 | 3-4 | 4 | 4 |
| Ballyglissane Bridge | 4 | 4 | 4 | 4 |
| Br u/p of Confluence of River Bride | 4 | 4 | 4 | 4 |

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

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

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

*Table F1-2: Receiving Water Quality Limiting Values*

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

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

***Effluent Standards***

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

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

| **Parameter** | **Effluent Standards (mg/l)** | **Actual Concentrations* (mg/l)** |
|---|---|---|
| Biological Oxygen Demand (BOD) | 25 | 5.6 |
| Suspended Solids (SS) | 35 | 13 |

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Feb '08 to July '08.

From Table 4 above, it is evident that treated effluent from the Watergrasshill wastewater treatment plant is compliant with the quality of effluent standards set out in the above legislation.



***Assimilative Capacity of the Receiving Water***

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

Median flow of River = 0.375 $m^3$/sec
Median $oPO_4$-P in River (upstream) = 0.05 mg/L

Average volume of discharge = 0.007 $m^3$/sec
Median value for $oPO_4$-P in discharge = 1.075 mg/L

$$C_{final} = \frac{(0.375 \times 0.05) + (0.007 \times 1.075)}{0.375 + 0.007}$$

$C_{final}$ = 0.0688 mg/L $oPO_4$-P

The increase in Orthophosphate due to the discharge of Watergrasshill WWTP is 18.8 $\mu$g/L.

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

Flow of River (95%) = 0.0665 $m^3$/sec
Average BOD in River (upstream) = 1.51 mg/L

Average volume of discharge = 0.007 $m^3$/sec
Average BOD in discharge = 5.63 mg/L

$$C_{final} = \frac{(0.0665 \times 1.51) + (0.007 \times 5.63)}{0.0665 + 0.007}$$

$C_{final}$ = 1.90 mg/L BOD

The increase in BOD due to the discharge of Watergrasshill WWTP is 0.39 mg/L.

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



Flow of River (95%) = 0.0665 $m^3$/sec
Average Suspended Solids in River (upstream) = 5.73mg/L

Average volume of discharge = 0.007 $m^3$/sec
Average Suspended Solids in discharge = 13mg/L

$$C_{final} = \frac{(0.0665 \times 5.73) + (0.007 \times 13)}{0.0665 + 0.007}$$

$C_{final}$ = 6.42 mg/L Suspended Solids

The increase in Suspended Solids due to the discharge of Watergrasshill WWTP is 0.69 mg/L.

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

50% Median flow of River = 0.375 $m^3$/sec
Median $TPO_4$-P in River (upstream) = 0.2 mg/L

Average volume of discharge = 0.007 $m^3$/sec
Median $TPO_4$-P in discharge = 1.355 mg/L

$$C_{final} = \frac{(.375 \times 0.2) + (0.007 \times 1.355)}{0.375 + 0.007}$$

$C_{final}$ = 0.22 mg/L $TPO_4$-P

The increase in Total Phosphate due to the discharge of Watergrasshill WWTP is 20 $\mu$g/L.

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

Flow of River (95%) = 0.0665 $m^3$/sec
Average Total Nitrogen in River (upstream) = 3.61 mg/L

Average volume of discharge = 0.007 $m^3$/sec
Average Total Nitrogen in discharge = 27 mg/L

$$C_{final} = \frac{(0.0665 \times 3.61) + (0.007 \times 27)}{0.0665 + 0.007}$$

$C_{final}$ = 5.84 mg/L Total Nitrogen

The increase in Total Nitrogen due to the discharge of Watergrasshill WWTP is 2.23 mg/L.



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

Flow of River (95%) = 0.0665 $m^3$/sec
Average Sulphate in River (upstream) = 30 mg/L

Average volume of discharge = 0.007 $m^3$/sec
Average Sulphate of discharge = 38.7 mg/L

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

$$C_{final} = \frac{(0.0665 \times 30) + (0.007 \times 38.7)}{0.0665 + 0.007}$$

$C_{final}$ = 30.83 mg/L Sulphate

The increase in Sulphate due to the discharge of Watergrasshill WWTP is 0.83 mg/L.

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

Flow of River (95%) = 0.0665 $m^3$/sec
Average Ammonia-N in River (upstream) = 0.29 mg/L

Average volume of discharge = 0.007 $m^3$/sec
Average Ammonia-N in discharge = 0.07 mg/L

Average Ammonia-N in River (downstream) = 0.42 mg/L

$$C_{final} = \frac{(0.0665 \times 0.29) + (0.007 \times 0.07)}{0.0665 + 0.007}$$

$C_{final}$ = 0.27 mg/L Ammonia

The increase in Ammonia due to the discharge of Watergrasshill WWTP is 0.02 mg/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 5 & 6 below was recorded by Cork County Council wastewater laboratory and covers a sampling period from April 2008 to July 2008.

Also discharging to the River Flesk, downstream of the WWTP, is effluent from Kepak IPPC No. PO 595-01. The activities undertaken at the Kepak facility include the Slaughter of animals in installations where the capacity exceeds 1500.

*Table F1-5: Upstream Water Quality*

| Parameter | Upstream Monitoring Station | | | | |
|---|---|---|---|---|---|
| | **03/04/08** | **04/06/08** | **12/06/08** | **10/07/08** | **17/07/08** |
| Ph | - | 7.3 | - | - | 7.4 |
| BOD | <1.0 | 1.51 | 1.5 | - | <1.0 |
| SS | 3 | 11 | 6 | 3 | 6 |
| Ammonia | <0.1 | <0.1 | 0.2 | - | <0.1 |
| Ortho-Phosphate | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 |

*Table F1-6: Downstream Water Quality*

| Parameter | Downstream Monitoring Station | | | | |
|---|---|---|---|---|---|
| | **03/04/08** | **04/06/08** | **12/06/08** | **10/07/08** | **17/07/08** |
| Ph | - | 7.3 | - | - | 7.3 |
| BOD | 1.31 | <1 | 2.97 | - | <1.0 |
| SS | 3 | 8 | 8 | 3 | 6 |
| Ammonia | <0.1 | <0.1 | 0.2 | - | <0.1 |
| Ortho-Phosphate | <0.05 | <0.05 | <0.41 | 0.1 | <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.



## 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 |
|---|---|---|---|---|---|---|---|
| Abstraction Code | Conna Reginal Water Supply | 1136 $m^3$/day | Point Code Provide label ID's | 12Km | 184559 | 091382 | Y = GPS used<br>N = GPS not used |

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

The effluent from the primary and secondary discharge points are discharged to the River Flesk. The River Flesk joins the River Bride approximately 8km downstream of the discharge point of the WWTP. 3km further downstream of the River Bride, Conna Regional Water Supply abstracts water. Approximately 1,136$m^3$/day is abstracted from the River Bride and treated at Conna Regional Water Treatment Plant.

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.

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

Attachment F.2 includes

- Cryptosporidium Risk Assessment for Conna Regional
- Agglomeration for Conna Regional Distribution Network.

# SECTION G: PROGRAMMES OF IMPROVEMENTS

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

## G.1 Compliance with Council Directives

Provide details on a programme of improvements to ensure that emissions from the agglomeration or any premises, plant, methods, processes, operating procedures or other factors which affect such emissions will comply with, or will not result in the contravention of the;

- Dangerous Substances Directive 2006/11/EC,
- Water Framework Directive 2000/60/EC,
- Birds Directive 79/409/EEC,
- Groundwater Directives 80/68/EEC & 2006/118/EC,
- Drinking Water Directives 80/778/EEC,
- Urban Waste Water Treatment Directive 91/271/EEC,
- Habitats Directive 92/43/EEC,
- Environmental Liabilities Directive 2004/35/EC,
- Bathing Water Directive 76/160/EEC, and
- Shellfish Waters Directive (79/923/EEC).

The plant is operating satisfactory at present and is operating within the requirements of the relevant legislation, outlined above. Improvements to ensure continued compliance include the recent installation of a 6mm Haigh 760 Automatic Screen at the inlet works.

Further improvements to the plant include the provision of a Picket Fence Thickener for the WWTP. The PFT shall be 6.9m ∅ by 4m high and shall have a capacity of 105m$^3$, which equates to 4 weeks storage of sludge.



### 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 four locations along the River Flesk downstream (d/s) of the WWTP. These are located at the following:

- Condonstown Bridge 0.35 km d/s
- Ballinallig Bridge 2.35km d/s
- Ballyglissane 5.35km d/s
- Br u/s of confluence of River Bride

*Table G1-1: Upstream Water Quality*

| **Parameter** | **Upstream Monitoring Station** | | | | |
|---|---|---|---|---|---|
| | **03/04/08** | **04/06/08** | **12/06/08** | **10/07/08** | **17/07/08** |
| Ph | - | 7.3 | - | - | 7.4 |
| BOD | <1.0 | 1.51 | 1.5 | - | <1.0 |
| SS | 3 | 11 | 6 | 3 | 6 |
| Ammonia | <0.1 | <0.1 | 0.2 | - | <0.1 |
| Ortho-Phosphate | <0.05 | <0.05 | <0.05 | 0.06 | <0.05 |



*Table G1-2: Downstream Water Quality*

| **Parameter** | **Downstream Monitoring Station** | | | | |
|---|---|---|---|---|---|
| | **03/04/08** | **04/06/08** | **12/06/08** | **10/07/08** | **17/07/08** |
| Ph | - | 7.3 | - | - | 7.3 |
| BOD | 1.31 | <1 | 2.97 | - | <1.0 |
| SS | 3 | 8 | 8 | 3 | 6 |
| Ammonia | <0.1 | <0.1 | 0.2 | - | <0.1 |
| Ortho-Phosphate | <0.05 | <0.05 | <0.41 | 0.1 | <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 River Flesk. 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.

There are no large public groundwater sources in the area. Charleville, Millstreet, Ballinatona and Fermoy are the closest PWS that utilise ground water for large water supplies.

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

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

Water is abstracted from the River Bride for treatment at Conna Regional Water Supply, the abstraction point is located 12km 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 Watergrasshill Wastewater Treatment Plant was commissioned in 2002 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 Watergrasshill wastewater treatment plant is treating effluent to a high standard. Efficiencies of BOD, COD and SS

removal for the plant is typically in excess of 85%. The effect of the discharges on the quality of the receiving waters is assessed in Attachment F1.
The Third Schedule of the 2001 Regulations gives a list of Sensitive areas.

Article 4(2)(a) states that all discharges into Sensitive Areas require more stringent treatment than secondary treatment. The River Flesk 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 Watergrasshill 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 River Flesk 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 Bride), is also not designated under these regulations.
.

**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 River Flesk 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 Watergrasshill 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 discharge to the River Flesk, which flows adjacent to the WWTP site boundary. The River Flesk is a tributary of the River Bride, which is in turn a tributary of the Blackwater River (Munster).

The EPA have three number stations on the River Flesk, upstream along the Flesk (Upper) the Q value of the river is 3, while downstream following the confluence of the Flesk (lower) to the main artery of the River the Q value is 3-4, the third monitoring station by the EPA along the River Flesk prior to the confluence of the River Flesk and River Bride shows a Q value of 4.

***Effluent Standards***

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

As a natural consequence of secondary treatment, there will be an uptake of phosphorous for biomass synthesis at the wastewater treatment plant in

Watergrasshill. 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** | |
|---|---|---|
| | **06/08** | **07/08** |
| Ortho-Phosphate | 5.26 | 4.66 |

*Table G2-4: Phosphorus Levels in Effluent from WWTP*

| **Parameter** | **Outlet Monitoring Station** | |
|---|---|---|
| | **06/08** | **07/08** |
| Ortho-Phosphate | 1.93 | 0.66 |

From above, it is evident that treated effluent from the Watergrasshill wastewater treatment plant is compliant with the quality of effluent standards set out in the Urban Waste Water Directive criteria for discharges to sensitive water even though this designation does not apply for this area.

**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.

Improvements to ensure continued compliance include the recent installation of a 6mm Haigh 760 Automatic Screen at the inlet works.

Further improvements to the plant include the provision of a Picket Fence Thickener for the WWTP. The PFT shall be 6.9m ∅ by 4m high and shall have a capacity of 105m$^3$, which equates to 4 weeks storage of sludge.The works are due to commence in September 2008 and it is envisaged works shall be completed with 6 months.

**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.

The are no overflows within the agglomeration other that those from the primary and secondary overflows.

**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 :** 19th September 2008
*(on behalf of the organisation)*

**Print signature name:** THOMAS G. 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 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 contain(s) the information requested in the appropriate 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, | | |
| **(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, | | |
| **(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, | | |
| **(d)** | state the population equivalent of the agglomeration to which the application relates, | | |
| **(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, | | |
| **(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. | | |

| **Regulation 16(1) continued…/** | | **Attachment Number** | **Checked by Applicant ✓** |
|---|---|---|---|
| **(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, | | |
| **(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, | | |
| **(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, | | |
| **(j)** | give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points, | | |
| **(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, | | |
| **(l)** | give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations, | | |
| **(m)** | give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work. | | |
| **(n)** | Any other information as may be stipulated by the Agency. | | |

| **Regulation 16(3)** Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by - | | **Attachment Number** | **Checked by the applicant ✓** |
|---|---|---|---|
| **(a)** | a copy of the notice of intention to make an application given pursuant to Regulation 9, | | |
| **(b)** | where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13, | | |
| **(c)** | Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate - | | |
| | (i) the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and | | |
| | (ii) the point or points at which monitoring and sampling are undertaken or are to be undertaken, | | |
| **(d)** | such fee as is appropriate having regard to the provisions of Regulations 38 and 39. | | |
| **Regulation 16(4)**<br>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. | | | |
| **Regulation 16(5)**<br>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 format specified by the Agency. | | | |
| | Signed original. | | |
| | 2 hardcopies of application provided or 2 CD versions of application (PDF files) provided. | | |
| | 1 CD of geo-referenced digital files provided. | | |
| **Regulation 17**<br>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 | | | |
| | EIA provided if applicable | | |
| | 2 hardcopies of EIS provided if applicable. | | |
| | 2 CD versions of EIS, as PDF files, provided. | | |

## ANNEX 1: TABLES / ATTACHMENT

| Attachment | Description |
|---|---|
| A1 Map 1 | 1:50,000 Location Map |
| A1 Map 2 | Site Location of WWTP & Pumping Stations |
| A1 Map 3 | Site Layout |
| B1 Map 4 | Agglomeration |
| B2 Map 5 | Location of Waste Water Treatment Plant |
| B3 Map 6 | Location of Primary Discharge Point SW01 WGH |
| B4 Map 7 | Location of Secondary Discharge Point SW01 WGH |
| B5 | Not Applicable |
| B6 | Part VIII Planning |
| B7 | Not Applicable |
| B8 Map 8 | Location of Site Notice |
| B8 | Notice & Advertisement |
| B10 | WSIP Programme |
| B 11 | Not Applicable |
| B 12 | Not Applicable |
| C1 Map 9 | Wastewater Treatment Plant |
| C1 Drg 1 | Schematic of Wastewater Treatment Plant |
| C2 | Not Applicable |
| D1 | Influent Results |
| Section D2 | Discharge Points |
| Section E3 | Monitoring & Sampling Points |
| E4 | Monitoring Data |
| F1 | Laboratory Test Results<br>SAC Blackwater River Site Synopsis |
| F2 Map 10 | Agglomeration Map for Conna Regional Water Supply Network |
| F2 | Conna Regional Water Abstraction Results<br>Conna Regional Cryptosporidium Risk Assessment<br>Abstraction Points |
| G1 | SAC Blackwater River Site Synopsis<br>WSIP Programme |
| G2 | WSIP Programme<br>Laboratory Test Results |
| G3 | WSIP Programme |
| G4 | Not Applicable |