

Comhairle Contae Chorcaí Cork County Council

County Hall,
Cork, Ireland.
Tel: (021) 4276891 • Fax: (021) 4276321
Web: www.corkcoco.ie
Halla an Chontae,
Corcaigh, Éire.
Fón: (021) 4276891 • Faics: (021) 4276321
Suíomh Gréasáin: www.corkcoco.ie



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

Our Ref.: MS/DLKille/0209

24th February 2009

Sub.: Waste Water Discharge License Application for the Agglomeration of Killens, County Cork.

Dear Sir/Madam,

Please find enclosed the waste water discharge license application for the agglomeration of Killeens in County Cork.

The following are the documents enclosed as per the application guide note.

- 1 No. signed hard copies of originals.
- 1 No. hard copy of originals.
- 2 No. CD-ROM with documentation in electronic searchable PDF,
- 1 No. CD-ROM with GIS Data, Table D.2 ,Table E.3.and Table F.2

The content of the electronic files is true copy of the original hard copy.

Also enclosed is a paying order for the application fee of €15,000.

Yours faithfully,

Patricia Power

Director of Services





Waste Water Discharge Licence Application Form

For inspection purposes only.
Consent of copyright owner required for any other use.

EPA Ref. N^o: <i>(Office use only)</i>	<input type="text"/>
--	----------------------

Environmental Protection Agency
PO Box 3000, Johnstown Castle Estate, Co. Wexford
Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699
Web: www.epa.ie Email: info@epa.ie

Tracking Amendments to Draft Application Form

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

Waste Water Discharge Authorisation Application Form

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

For inspection purposes only. Consent of copyright owner required for any other use.



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

CONTENTS

Table with 2 columns: Section Name and Page. Includes sections like TRACKING AMENDMENTS TO DRAFT APPLICATION FORM, ABOUT THIS APPLICATION FORM, PROCEDURES, SECTION A: NON-TECHNICAL SUMMARY, SECTION B: GENERAL, and SECTION C: INFRASTRUCTURE & OPERATION.

For inspection purposes only.
Consent of copyright owner required for any other use.



Waste Water Discharge Authorisation Application Form

C.1 OPERATIONAL INFORMATION REQUIREMENTS	22
C.2 OUTFALL DESIGN AND CONSTRUCTION.....	27
SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT	29
D.1 DISCHARGES TO SURFACE WATERS.....	29
D.2 TABULAR DATA ON DISCHARGE POINTS.....	30
SECTION E: MONITORING	31
E.1 WASTE WATER DISCHARGE FREQUENCY AND QUANTITIES – EXISTING & PROPOSED.....	31
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/	31
E.2. MONITORING AND SAMPLING POINTS	31
E.3. TABULAR DATA ON MONITORING AND SAMPLING POINTS	33
E.4 SAMPLING DATA.....	33
SECTION F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)	34
F.1. ASSESSMENT OF IMPACT ON RECEIVING SURFACE OR GROUND WATER ..	34
F.2 TABULAR DATA ON DRINKING WATER ABSTRACTION POINT(S).....	42
SECTION G: PROGRAMMES OF IMPROVEMENTS	43
G.1 COMPLIANCE WITH COUNCIL DIRECTIVES	43
G.2 COMPLIANCE WITH WATER QUALITY STANDARDS FOR PHOSPHORUS REGULATIONS (S.I. NO. 258 OF 1998).....	46
G.3 IMPACT MITIGATION.....	48
G.4 STORM WATER OVERFLOW.....	48
SECTION H: DECLARATION	49
SECTION I: JOINT DECLARATION	50

ANNEX 1: TABLES/ATTACHMENTS

ANNEX 2: CHECKLIST

ABOUT THIS APPLICATION FORM

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

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

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

This Application Form does not purport to be 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. The abbreviation "N/A" should not be used.

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

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

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

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

Note: 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.

For inspection purposes only.
Consent of copyright owner required for any other use.

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 N° A.1**

For inspection purposes only. Consent of copyright owner required for reuse.

SECTION A: NON-TECHNICAL SUMMARY

The Waste Water Works and the Activities Carried Out Therein

The village of Killeens is situated approximately 1.5 km to the west of Cork City and approximately 3 km east of Blarney village.

The waste water collection system for the Killeens catchment predominantly separate. There are no combined storm overflows in the system. Surface water is collected and discharged to local watercourses; foul sewerage is collected and discharged to the WWTP. Due to the topography of the village a number of pumping stations are located within the village. The Waste water Treatment Plant is located to the west of the village, adjacent to the N20 Cork-Mallow road.

Waste water is pumped from two pumping stations which are located in the housing estates at Carraig Rua and SeanaBothar to the main trunk sewer that follows the south-western boundary of the catchment, adjacent to the Cork-Mallow road. This sewer in turn discharges to the WWTP.

The present design capacity is 600 PE. The existing waste water collection network is capable of conveying a peak flow of 6 DWF for 1,200PE. The waste water collection system primarily serves new residential developments, some long established houses and the Sunset Ridge Hotel which is the most significant non-domestic discharge. The actual PE entering the existing treatment plant is approximately 860.

An independent foul sewer network caters for approximately 9 houses and a public house located at the south-east part of the village. Sewerage from the public house and a number of houses is conveyed to an existing communal septic tank and soak pit area.

On entering the WWTP the waste water is directed through the on-line macerator and forward to the primary treatment. If the macerator capacity is exceeded the flow by-passes the macerator and goes through a bar screen and onto the primary treatment stage. In the event of the by-pass capacity being exceeded, then the waste water passes through the emergency overflow weir and discharges directly to the small stream adjacent to the WWTP.

The primary settling tank comprises two cells. The capacity allows a retention time of 2 hours for a peak flow of 3 DWF and for sludge storage. Following primary Settlement the effluent is discharged to a Rotating Biological Contractor.

The RBC comprises four blocks, contained in four chambers built in series. Each block consists of several wheels of 3m diameter. The waste water enters the first compartment and flows through each consecutive compartment through baffles in the dividing walls between the compartments. From the last compartment, the treated waste water is discharges to the final clarifier.

The final clarifier is a vertical flow type tank with a hopper bottom. The effluent from the RBC is discharged to this tank just above top water level. A stilling box is provided in the centre of the clarifier.

Settled sludge from the final clarifier is pumped back to the primary settling tank, this is done manually approximately every six months. The treated effluent is discharged to the final effluent sump. The sump comprises a pump sump and

valve chamber. From the sump, the final effluent is pumped to a header manhole and then discharges by gravity to an outfall, on the Blarney River.

Currently the WWTP is receiving flows of approximately 189m³/d, giving an average population equivalent of 860 (based on an a contributing 220l/PE/d).

The WWTP is currently being extended to cater for 1,200PE (based on an a contributing 180l/PE/d) and a BOD loading of 72kg/d.

The upgrade of the new WWTP is to include:

- The upgrade of the inlet works
- Provision for storm tank including storm return pumps
- Provision of primary settlement WAS pumps
- Construction of a new Rotating Biological Contractor (RBC)
- Provision of a secondary settlement tank
- Provision of chemical dosing for phosphorous removal
- Provision of 21 days on site sludge holding tank
- Sand Filter treatment

The sources of emissions from the waste water works

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

- Domestic population
- Commercial premises
- 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 current design capacity of Killeens WWTP is 600 PE based on 220l/head/day. The design parameters for future population are 1200 PE based on 180l/head/day.

Final effluent is being discharged into the Blarney River, analysis of the discharge has shown non compliance for some parameters. Due to high background levels of phosphorus, phosphorus reduction is being incorporated into the extension to the WWTP.

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

Technology

The upgraded WWTP will have a sufficient number of standby pumps, streams, storm holding facilities, sludge holding facilities, etc. is provided to ensure continuation of the waste water treatment.

The upgraded plant shall include the following elements:

- Improved Inlet Screening
- Original primary settlement treatment tank & balance tanks
- One new Rotating Biological Contractor
- Phosphorus removal
- A secondary settlement tank (clarifier) with sludge return-pump
- Tertiary sand filter
- A sludge holding tank

Techniques

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

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

Chemical storage tanks and dosing equipment shall be located within lined bunds.

An instrumentation and control system together with on site monitoring and sampling is provided to ensure satisfactory operation of the plant.

Measures planned to monitor emissions into the environment

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

Cork County Council will also take samples from the Blarney River downstream of the WWTP approximately 4 times per year.

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 Blarney River is to have a number of operational monitoring sites under this monitoring programme.

List of Attachments include the following:

- | | |
|---|---------------------|
| • Location Map Scale 1:25,000 | Attachment A1 Map 1 |
| • Site Location Map of WWTP & Pumping Station | Attachment A1 Map 2 |
| • Existing Site Layout | Attachment A1 Map 3 |
| • Proposed Site Layout | Attachment A1 Map 4 |

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration: Killeens Agglomeration

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:	Southern Division
	County Hall
	Carrigrohane Road
	Co. Cork
Tel.:	021 427 6891
Fax:	021 427 6321
e-mail:	patricia.power@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*:	Patricia Power
Address:	Area Operations South
	County Hall
	Carrigrohane Road
	Cork
Tel.:	021 4285 285
Fax:	021 4276 321
e-mail:	patricia.power@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 ($\leq A3$) 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*:	Noreen O' Mahony
Address:	Cork County Council
	Ballincollig/ Blarney Water Services Office
	Innishmore
	Ballincollig
	Co. Cork.
Grid ref (6E, 6N)	164092E, 075447N
Level of Treatment	Secondary (existing), Tertiary (proposed)
Primary Telephone:	021 4875643
Fax:	021 4289868
e-mail:	noreen.omahony@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 ($\leq A3$) 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.

Existing and Future Location of Primary Discharge Point:

Type of Discharge	225mm diameter outfall pipe from header manhole in verge of the N20 road.
Unique Point Code	SW01 - Killeens
Location	Blarney River, Monard
Grid ref (6E, 6N)	163793E, 075646N

Attachment B.3 should contain appropriately scaled drawings / maps ($\leq A3$) 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.

Existing and Future Location of Secondary Discharge Points:

Type of Discharge	225mm diameter overflow pipe from the sump pump discharging directly to the nearby stream – Emergency Overflow
Unique Point Code	SW02 - Killeens
Location	WWTP Site at Killeens
Grid ref (6E, 6N)	164037E, 075468N

Type of Discharge	225mm diameter overflow pipe from the inlet works discharging directly to the nearby stream in the proposed design the overflow will flow into the storm tank and then overflow to the stream – Emergency Overflow
Unique Point Code	SW03 - Killeens
Location	WWTP Site at Killeens
Grid ref (6E, 6N)	164069E, 075433N

Attachment B.4 should contain appropriately scaled drawings / maps ($\leq A3$) 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 ($\leq A3$) 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
	Carrigrohane Road
	Cork
Tel.:	021 4276891
Fax:	021 4867007
e-mail:	planninginfo@corkcoco.ie

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

<i>has been obtained</i>	√	<i>is being processed</i>	
<i>is not yet applied for</i>		<i>is not required</i>	

Local Authority Planning File Reference N^o:	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 South
	Áras Sláinte
	Wilton Road, Cork
Tel.:	021 4545011
Fax:	021 4927228
e-mail:	Not Available

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 ($\leq A3$) showing its location. **The original application must include the original page of the newspaper in which the advertisement was placed.** The relevant page of the newspaper containing the advertisement should be included with the original and two copies of the application.

Attachment included	Yes	No
	√	

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	860 (current) 1200 (future)
Data Compiled (Year)	2006
Method	Desk Study

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 Killeens WWTP is approx 860. This is based on the current influent volume. It is proposed that the upgrade to

the WWTP will be capable of treating a design PE of 1200. The required capacity for the WWTP was determined through review of The following:

- 1996 Cork County Development Plan
- 1999 Variation to 1996 Cork County Development Plan
- 2003 Cork County Development Plan
- Blarney Electoral Area Local Area Plan (2005)
- Planning files for developments in the area
- CASP – Cork Area Strategic Plan (20-year plan)

The agglomeration includes all lands zoned under the Local Area Plan (LAP) (2005). The full development of these lands in line with the Development Plan has been assessed. A Design Review Report completed in 2006 gave the following estimates of Existing & Future Domestic & Non-Domestic Loadings to determine the required capacity of the WWTP:

Category	Population Equivalent
Current Domestic	750
Possible Future Domestic	215
Total Domestic	1056
Current Non-Domestic	110
Possible Future Non-Domestic	20
Total Non-Domestic	130
Total P.E.	1186

The upgraded WWTP has been designed to accommodate the additional capacity required to allow full development of the lands zoned in the LAP. Upon completion the plant shall be capable of treating the additional hydraulic and organic loading without posing an environmental risk to the receiving water 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 €)
Discharge from agglomeration with a population equivalent of 1001 to 2000	€15,000

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

The WWTP at Killeens is being upgraded as a Serviced Land Initiative (SLI) project on the Water Services Investment Programme 2007-2009. Construction works commenced in 2008 and commissioning is programmed for April 2009.

During the upgrade works period waste water will be treated using the the existing WWTP process. The upgraded plant will cater for a PE of 1,200 and a BOD loading of 72Kg/d. The upgrade will include:

- Modification to the inlet chamber
- Primary Sludge’s WAS pumps, secondary sludge’s RAS/WAS pumps
- Construction of new Rotating Biological Contractor (RBC)
- Chemical dosing of phosphorus
- Construction of a secondary clarifier
- Sludge thickening tank
- Balance tank
- Tertiary treatment in a sand treatment tank

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 Killeens 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

Killeens Waste Water Treatment Plant does not require a Foreshore Act Licence under the Foreshore Act 1933.

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

	Yes	No √
--	-----	---------

*For inspection purposes only.
Consent of copyright owner required for any other use.*

SECTION C: INFRASTRUCTURE & OPERATION

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

C.1 Operational Information Requirements

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

C.1.1 Storm Water Overflows

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

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

C.1.1 Storm Water Overflows

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.

C.1.2 Pumping Stations

There are two pumping stations located within the collection system serving the Killeens WWTP. There is also one proposed pumping station which will form part of a future collection system upgrade.

- The collection system serving the pumping stations in Killeens is a separate system.
- In each of the pumping stations in the village of Killeens there is one duty and one standby pump.
- In the event of a power failure the chamber will fill and waste water will back up in the collection system.
- Storage capacity is provided at the pump stations, details are not available as they have not been taken in charge by Cork County Council.

- There is no record of the frequency of failure of the pumps/power outages.

C.1 Existing Waste Water Treatment Plant

The existing Waste Water Treatment Plant in Killeens is located to the west of the village, adjacent to the N20 Cork-Mallow road. The treatment plant is designed for a population equivalent of 600. Most of the waste water flows by gravity to the WWTP; however, not all areas can discharge to the public sewer due to the topography of the catchment. There are currently two small pumping stations which pump foul flow to the public gravity sewer.

Influent initially enters the inlet works via an inlet manhole. The inlet works consist of an on-line macerator, a bar screen and an emergency overflow weir. The effluent then enters the primary settlement tanks which have a retention time of two hours. The effluent then enters a rotating biological contractor. From here it enters the final clarifier with hopper bottom. Approximately every six months the settled sludge is pumped back into the primary settlement tank. The final effluent is pumped through a rising main to a header manhole located in the verge of the N20 road and then discharges by gravity to an outfall on the Blarney River.

The design dry weather flow (DWF) for the plant is 132m³/day, which is based on a population equivalent of 600 contributing 220 l/head/day. This equates to an average flow of 5.5m³/hr.

General Description of the Proposed New Upgraded Plant

The upgraded WWTP will utilise Rotating Biological Contractors (RBC) with equipment necessary for the efficient operation of the plant. The upgraded plant is sized to treat 1,200 PE. The upgrade includes a tertiary filter, in order to achieve the required 10/70/35 mg/l BOD/COD/SS and 1mg/l Phosphorus standard required.

The plant operates as follows:

1. The maximum incoming flow in to the inlet works is 198 m³/h. The inlet works comprises of 1 no. Mechanical Screen complete with manual screen bypass. The screen is supplied with a screening tray with a water supply to clean and convey the screenings into a disposal bin. The screen size is 6mm. All screenings are washed, separated and deposited in skips for removal off site. Flows in excess of 3 DWF will overflow a storm weir after inlet screens and flow to the storm water storage tank.
2. The effluent then flows to the primary settlement tanks which have a retention time of two hours for a peak flow of 3 DWF. The primary treatment process removes the grit and other solids through a screening process followed by a period of settlement.
3. The rotating biological contractor is a biological treatment process following primary treatment. The effluent flows into the RBC unit allowing the effluent to come in contact with a biological medium in order to remove pollutants in the waste water before discharge. A RBC consists of closely spaced, parallel discs mounted on a rotating shaft which is supported just above the surface of the waste water. Micro-organisms grow on the surface of the discs where biological degradation of the waste water pollutants takes place. The rotating pack of discs are contained in a tank. The shaft is aligned with flow of waste water so that

the discs rotate at right angles to the flow with several packs usually combined to make up a treatment train. The biological growths that become attached to the discs assimilate the organic materials in the waste water. Aeration is provided by the rotating action, which exposes the media to the air after contacting them with the waste water, facilitating the degradation of the pollutants being removed.

4. Following the RBC the effluent flows to chemical treatment to reduce the phosphorus level. Phosphorus exists in three main forms in waste water; ortho-phosphate, polyphosphate and organic phosphate. During aerobic treatment, the later two forms are converted to ortho-phosphate, which is the easiest form to precipitate using chemical addition. Phosphorus will be removed using chemical dosing of ferric sulphate.
5. The secondary clarifier will be connected to the RBC. The clarifier walls have a slope of 7½ degrees approximately to prevent solids accumulation and ensure that settled solids move by gravity to the bottom of the clarifier. The settled solids in the bottom of the clarifier hopper shall be returned by RAS pump. The clarifier is also equipped with a scum box to remove scum into a scum chamber by gravity from where it is pumped to the sludge storage tank and effluent weir trough. The sludge return pump shall then pump the sludge to the start of the process (i.e. primary settlement tanks). Flows from the secondary settlement tank shall gravitate into a balance tank where it is then pumped to tertiary treatment based on a gravity sand filter.
6. In the tertiary treatment the effluent is pumped to the top of the sand filter. The effluent is fed into an area above the entire sand bed. As the effluent flows evenly down through the sand media, the dirty particles are trapped and remain between the grains of sand. The filtered water, at the bottom of the sand filter, is discharged to the receiving waters. The cleaning of the sand filter is performed by the injection of water, which flushes the sand grains in the filter. The sand media is cleaned by pumping water up through the sand filter; this is known as the backwash period. The backwash period occurs on regular intervals, set up by timer. Dirty water from the backwash period shall be returned to the head of the works downstream of the inlet flow meter.
7. Final effluent prior to discharge to the existing outfall is subject to outflow measurement and sampling.
8. Sludge from the secondary settlement tanks and primary settlement tanks are 0.75% and 2% respectively. The sludge is thickened in the sludge holding tank by gravity to 2-3% DS and tanked off site. The supernatant from the sludge holding tank is pumped to the adjacent waste return sump and is pumped to the inlet works for recycle through the process.

Supporting Design Calculations

1. Storm tank and Return Pumps

$$3DWF = 27 \text{ m}^3/\text{h}$$

No. Pumps return required	2 No. (Duty Standby)
Flow rate:	27 m ³ /h
Tank volume:	36 m ³

Retention time:	$(36\text{m}^3)/(27\text{m}^3/\text{h})$ =1.3h @3 DWF
Storm tank dimensions:	5.4m x 2.7m x 3.1m side wall Venture cleaning system

2. Inlet Screen

$$3\text{DWF} = 27\text{m}^3/\text{h}$$

No. Required:	2 No. (Duty/Standby)
Max flow rate:	55L/s = 198m ³ /h
Screening size:	6mm
Other:	Screenings washer and compaction 10mm by-pass screen Sealed skip Level sensor

3. Rotating Biological Contractor (RBC)

No. of Rotating Biological Contractors	1 No.
Daily Flow Rate	108 m ³ /d
Activated Sludge Production	86.4kg/day
Unit Surface Area	2,012.5m ²
Daily Working Time	24 hrs

4. Secondary Settlement Tank

$$3\text{DWF} = (27 \text{ m}^3/\text{h})/(2 \text{ tanks}) = 13.5 \text{ m}^3/\text{h}$$

No. Required	1 No. (New)
Flow Rate	13.5 m ³ /h
UFV	0.85m/h
Surface Area	$(13.5\text{m}^3/\text{h})/(0.85\text{m}/\text{h})=15.9\text{m}^2$
Dimensions	Ø4.5mx2.4m deep
Volume	$15.9\text{m}^2 \times 2.4\text{m} = 38\text{m}^3$
Retention Time	$(38\text{m}^3)/(13.5\text{m}^3/\text{h})=2.8\text{h}$

5. RAS/WAS Pumps

Primary Sludge's WAS Pumps

WAS Pumps No. Required	3 No. (2 Duty/1 Standby)
Flow Rate	1.68 m ³ /h
% DS	2% DS

Secondary Sludge's RAS/WAS Pumps

RAS/WAS Chamber	Ø2.1mx2.4m deep
No. Required	2 No. (Duty/Standby)
Flow Rate	27 m ³ /h

% DS	0.75% DS
------	----------

6. Phosphorous Removal

No. Dosing Pumps	3 No. (2 Duty/1 Standby)
Chemical Treatment	17.89 L Ferric Solution/d
Flow Rate	0.5 l/h
Storage Volume	1 m ³
Approx Storage Capacity	40 day

7. Sludge Holding Tank

Total Sludge Production	[33.6(Primary)+56.4(Secondary)]kg sludge/d= 90kg sludge/d [1.68(primary)+7.52(secondary)]m ³ /d =9.2 m ³ /d
Blended Thickness (feed flow)	0.98% DS
Outlet Sludge Thickness	2% DS
Sludge Volume	4.5 m ³ /d @2%DS
Volume of Sludge Holding Tank	107 m ³
Dimensions	Ø6.07mx4m side wall (0.3m freeboard)
Retention time	(107m ³)/(4.5m ³ /d) = 23.7 days

8. Balance Tank

$$3DWF = 27\text{m}^3/\text{h}$$

No. Required	1 No. (New)
Dimensions	5.4mL x 2.7mW x 3.1m deep
Volume	36m ³
Retention Time	(36 m ³)/(27 m ³ /h) = 1.3h
No. Forward/Backwash Pumps	4No. (3 Duty/ 1 Standby)
Flow Rate (each)	27 m ³ /h

9. Sand Filter

$$3DWF = 27\text{m}^3/\text{h}$$

No. required	1 No. (New)
Filtration Rate	6 m/h
Surface Area	(27 m ³ /h)/(6 m/h)= 4.5m ²
Dimensions	Ø2.5m x 2m deep
Volume	4.5m ³ x2m = 9m ³
Backwash Flow Rate	81 m ³ /h

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 - Killeens

Type of Discharge	225mm diameter outfall pipe from header manhole in verge of the N20 road
Unique Point Code	SW01 - Killeens
Location	Blarney River, Monard
Grid ref (6E, 6N)	163793E, 075646N

The primary discharge point, SW01 - Killeens, is the main outlet from Killeens Waste Water Treatment Plant. The discharge from the WWTP is pumped approximately 30m in a south westerly direction to a header chamber, from here the effluent flows by gravity in a westerly direction approximately 270m to the outfall on the Blarney River. The point of discharge is a 225mm diameter pipe.

Secondary Discharge Point, SW01 - Killeens

Type of Discharge	225mm diameter overflow pipe from the sump pump discharging directly to the nearby stream – Emergency Overflow
Unique Point Code	SW02 - Killeens
Location	WWTP Site at Killeens
Grid ref (6E, 6N)	164037E, 075468N

The secondary discharge point, SW02 – Killeens, is a 225mm diameter overflow pipe from the sump pump at the WWTP. The outfall runs in a south westerly direction approximately 9m to the nearby stream. The point of discharge is a 225mm diameter pipe.

Secondary Discharge Point, SW03 - Killeens

Type of Discharge	225mm diameter overflow pipe from the inlet works discharging directly to the nearby stream in the proposed design the overflow will flow into the storm tank and then overflow to the stream – Emergency Overflow
Unique Point Code	SW03 - Killeens
Location	WWTP Site at Killeens

Grid ref (6E, 6N)	164069E, 075433N
------------------------------	------------------

The secondary discharge point, SW03 – Killeens, is a 225mm diameter overflow pipe from the inlet works at the WWTP. The outfall runs in a westerly direction approximately 20m to the nearby stream. The point of discharge is a 225mm diameter pipe.

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

Attachment included	Yes	No
	√	

For inspection purposes only.
 Consent of copyright owner required for any other use.

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
SW01 - Killeens	Primary	Cork County Council	River	Blarney River	-	163793	075646

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.

For inspection purposes only.
Consent of copyright owner required for any other use.

SECTION E: MONITORING

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

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

Provide an estimation of the quantity of waste water likely to be emitted in relation to all primary and secondary discharge points applied for. This information should be included in Table E.1(i) via the following web based link: 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.

Monitoring in respect of Killeens Waste Water Licence Application

The plant is currently monitored by the Environmental Directorate of Cork County Council on a twice per year basis to measure compliance with the requirements of the Urban Waste Water Directive. Samples are also collected upstream and downstream of the discharge location at this time. The Blarney River, which is the receiving water body, is monitored by the Water laboratory of Cork County Council and in recent times the Water Framework Directive as part of the River Basin Project. It is proposed to continue this multi-faceted approach to monitoring the treatment plant and the impacts of the discharge to the receiving waters.

General Laboratory Information

The Waste Water Laboratory of Cork County Council is accredited for a number of analytical tests under the Irish National Accreditation Board (INAB) under the ISO 17025 international standard. The details of the Accreditation can be found in Attachment E.2. The Waste Water Laboratory of Cork County Council is currently accredited for the following parameters under the ISO 17025 system:

- pH
- Biochemical Oxygen Demand
- Chemical Oxygen Demand
- Suspended Solids
- Ammonia
- Ortho Phosphates
- Total Phosphates
- Chloride
- Sulphate

The laboratory perform a number of analytical tests e.g. fats, oil , grease and metals using an ICP-OES system and while the Waste Water Laboratory of Cork County Council is not currently accredited for extra tests the same analytical procedures and protocol are adhered to by the laboratory as would be required if the tests were accredited. The laboratory also participates in proficiency testing schemes which measure the accuracy of the results and performance of the laboratory in both the EPA scheme and the WRC Aquacheck scheme from the UK. The performance of the laboratory in these schemes is excellent and the non-accredited tests are within the performance criteria for the schemes as evaluated by the scheme coordinators.

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	163793	075646	y
aSW01u	u/s	Sampling	163958	076004	y
aSW01d	d/s	Sampling	163680	075542	y

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
	√	

For inspection purposes only.
Consent of copyright owner required for any other use.

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://08.137.160.73/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/EEC¹ in accordance with the procedures laid down in Article 21 of that Directive,
 - (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or
 - (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC²;

¹Council 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)

²Council 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
	√	

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.

The receiving water body of the Killeens WWTP is the Blarney River, a tributary of the River Martin, which joins the Shournagh River and discharges to the River Lee at Bannow Bridge. There are no discharges to ground, or any other media.

Specific localised flow data is not available in the vicinity of the existing discharge points and thus estimates have been prepared based on available downstream flow data and on available catchment information.

These flow estimates including 95%ile and median flows are shown in the table below. They have been estimated based on the hydrometric data from an Office of Public Works (OPW) Station (<http://www.opw.ie/hydro/index.asp>) at Kilmona Bridge and from catchment information.

Table F1-1: Flow Data

Parameter	Blarney River at Killeens Discharge	OPW Station - Kilmona Bridge (Code 19044) W596820 Easting 159637 Northing 082006
95%ile (m ³ /s)	0.060 ¹	0.13
Median (m ³ /s)	0.583 ²	1.262 ³

1 Based on 95%ile for Kilmona Bridge and on catchment ratio of 0.462.

2 Assumed to be in same proportion to Kilmona station 95%ile flow.

3 Median flows provided for years 1992 to 2002.

With an estimated 95-percentile flow (i.e. a flow that is exceeded 95% of the time) of 60 l/sec, or 5,184 m³/day, there are 27.5 dilutions available in the Blarney River for the existing discharge (189 m³/d) while there are 24 dilutions available for the proposed maximum discharge of 1,200 PE at 180l/h/d.

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

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

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

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

The SWRBD have determined the Ecological Status as Moderate for the Blarney River due to the Physiochemical status. The Water Framework Objectives are included as attachment F1.

Designations under relevant directives

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

The Blarney River is not designated a Salmonid Water under Salmonid Water Regulations, S.I. 293 of 1988, the River Martin which the Blarney River flows into is also not a designated Salmonid Water.

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

The Blarney River is not a designated Sensitive Area under the Urban Waste Water Treatment Regulations 2001 (S.I. 254 of 2001). There is no sensitive area within 2km of any discharge point from Killeens WWTP.

Areas of Conservation

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

Special Areas of Conservation

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

The area which includes the Blarney River, the River Martin, The River Shournagh and the River Lee is not a designated Special Area of Conservation.

Natural Heritage Areas

Natural Heritage Areas are the basic designation for wildlife. A NHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

The Blarney River does not flow through any Natural Heritage Areas (NHA), however, it does flow through a proposed Natural Heritage Area (pNHA). It flows through an area called Blarney Bog (site code 001857).

The Shournagh flows through pNHA, Blarney Castle Woods (site code 001039)

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 Blarney River. There are also no special protected areas along the River Martin, along the River Shournagh or along the River Lee.

Receiving Water Quality Requirement

Water Quality analysis data for the Blarney River was undertaken by Cork County Council and this is presented in Attachment F1. The EPA also takes samples from one location along the Blarney River downstream of the treatment plant. This is located at the bridge North West of Killeens Cross

Table F1-2: Biological Quality Rating for Blarney River – Downstream of Discharge

Sampling Location	EPA Biological Quality Rating (Q values)			
	1994 -1997	1999 – 2002	2005-2008	Target
Br NW of Killeens Cross	3-4	3-4	4	4

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 (Based on Hardness of receiving waters >100mg/l CaCO₃, Blarney River Value 107mg/l): -

Table F1-3: Receiving Water Quality Limiting Values

Parameter	Water Quality Standard (ug/l)
Atrazine	1.0
Dichloromethane	10.0
Simazine	1.0
Toluene	10.0
Tributyltin	0.001
Xylenes	10.0
Arsenic	25
Chromium	30
Copper	30
Cyanide	10
Fluoride	500
Lead	10
Nickel	50
Zinc	100

Effluent Standards

The design treated effluent quality is shown in the table below.

Table F1-4: Design Effluent Standards

Parameter	Effluent Standards (mg/l) (Existing @132m3/d)	Effluent Standards (mg/l) (Proposed @216m3/d)
Biological Oxygen Demand (BOD)	20	10
Chemical Oxygen Demand (COD)	Not Applicable	70
Suspended Solids (SS)	30	35
Ortho Phosphorus	Not Applicable	1

The current discharge ranges from 22 – 47 mg/l BOD, 57 – 167 mg/l COD and 37-83 mg/l SS as per monitoring over the period 28/02/08 to 15/01/2009. The discharge is currently in excess of the design effluent standards. It is noted that the existing plant is due to be decommissioned shortly.

The Urban Waste Water Treatment Regulations S.I. 254 of 2001 require that waste water arising from populations of less than 2000, shall, by the end of 2005, be subject to appropriate treatment prior to discharge. Appropriate treatment is defined as:

“...any process and / or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions if the Directive and of other community Directives”

Give summary details and an assessment of the impacts of any existing or proposed emissions on the environment, including environmental media other than those to which the emissions are made.

Due to additional flow data available from the OPW, the assimilative capacity calculations for the Blarney River have been recalculated.

Assimilative Capacity of the Receiving Water – Existing Discharge

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

Median flow of River = 0.583 m³/sec
 Median oPO₄-P in River (upstream) = <0.06mg/L

Average volume of discharge = 0.0022 m³/sec
 Median value for O-PO₄-P in discharge = 1 mg/L

$$C_{\text{final}} = \frac{(0.583 \times 0.06) + (0.0022 \times 1)}{0.583 + 0.0022}$$

$$C_{\text{final}} = <0.0803 \text{ mg/L oPO}_4\text{-P}$$

The increase in Orthophosphate due to the discharge of Killeens WWTP is <0.0203 mg/L.

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

Flow of River (95%) = 0.0601 m³/sec
 Average BOD in River (upstream) = <1.0 mg/L

Average volume of discharge = 0.0022 m³/sec
 Average BOD in discharge = 36.33 mg/L

$$C_{\text{final}} = \frac{(0.0601 \times 1.0) + (0.0025 \times 36.33)}{0.0601 + 0.0022}$$

$$C_{\text{final}} = <2.241 \text{ mg/L BOD}$$

The increase in BOD due to the discharge of Killeens WWTP is <1.241 mg/L.

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

Flow of River (95%) = 0.0601 m³/sec
 Average Suspended Solids in River (upstream) = 19mg/L

Average volume of discharge = 0.0022 m³/sec
 Average Suspended Solids in discharge = 57.67mg/L

$$C_{\text{final}} = \frac{(0.0601 \times 19) + (0.0022 \times 57.97)}{0.0601 + 0.0022}$$

$$C_{\text{final}} = 20.18 \text{ mg/L Suspended Solids}$$

The increase in Suspended Solids due to the discharge of Killeens WWTP is 1.18 mg/L.

Assimilative Capacity of the Receiving Water – Proposed Dischargea) **Mass Balance Equation for Orthophosphate:**

Median flow of River = 0.583 m³/sec

Median oPO₄-P in River (upstream) = <0.06 mg/L

Average volume of discharge = 0.0025 m³/sec
 Median value for O-PO₄-P in discharge = 1 mg/L

$$C_{\text{final}} = \frac{(0.583 \times 0.06) + (0.0025 \times 1)}{0.583 + 0.0025}$$

$C_{\text{final}} = <0.0640 \text{ mg/L oPO}_4\text{-P}$

The increase in Orthophosphate due to the discharge of Killeens WWTP is <0.0040 mg/L.

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

Flow of River (95%) = 0.0601 m³/sec
 Average BOD in River (upstream) = <1.0 mg/L

Average volume of discharge = 0.0025 m³/sec
 Average BOD in discharge = 10 mg/L

$$C_{\text{final}} = \frac{(0.0601 \times 1) + (0.0025 \times 10)}{0.0601 + 0.0025}$$

$C_{\text{final}} = 1.360 \text{ mg/L BOD}$

The increase in BOD due to the discharge of Killeens WWTP is <0.360 mg/L.

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

Flow of River (95%) = 0.0601 m³/sec
 Average Suspended Solids in River (upstream) = 19mg/L

Average volume of discharge = 0.0025 m³/sec
 Average Suspended Solids in discharge = 35mg/L

$$C_{\text{final}} = \frac{(0.0601 \times 19) + (0.0025 \times 35)}{0.0601 + 0.0025}$$

$C_{\text{final}} = 19.64 \text{ mg/L Suspended Solids}$

The increase in Suspended Solids due to the discharge of Killeens WWTP is 0.64 mg/L.

Assimilative Capacity Calculations were not performed for the following parameters, as current levels are below those required by S.I. No. 12/2001

- (a) Arsenic
- (b) Chromium
- (c) Copper

- (d) Cyanide
- (e) Fluoride
- (f) Lead*
- (g) Nickel
- (h) Zinc

While the levels of lead included in the F1-5 below are indicated as <20 ug/l, the actual samples values are:

- Inlet: 12 ug/l
- Discharge: 8 ug/l
- Upstream: 0 ug/l
- Downstream: 2 ug/l

The background levels of lead found in the upstream and downs

Provide details of the extent and type of ground emissions at the works.

There are no emissions to ground at the works (existing or proposed)

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.

A screening programme was undertaken for the parameters set out in the Dangerous Substances Regulations S. I. No 12 of 2001 as per the table below. This programme measured the levels in the discharge from the existing WWTP on two occasions and measured river levels (upstream and downstream of the existing primary discharge point) on the Blarney on one occasion. It is evident that all parameters measured downstream were found to be below levels required by the Dangerous Substances Regulations.

Table F1-4: Dangerous Substances Monitoring

Parameter	Discharge		Upstream 15-Jan-09	Downstream 15-Jan-09
	28-Aug-08	15-Jan-09		
	µg/l		µg/l	µg/l
Phenols		<0.01	<0.1	<0.1
Atrazine		<0.01	<0.01	<0.01
Dichloromethane		<1	<1	<1
Simazine		<0.01	<0.01	<0.01
Toluene		<1	<1	<1
Xylenes		<1	<1	<1
Arsenic		<0.96	<0.96	<0.96
Chromium	<20	<20	<20	<20
Copper	<20	<20	<20	<20
Cyanide		<5.0	<5.0	<5
Flouride		pending	pending	pending
Lead	22.00	<20	<20	<20

Nickle	<20	<20	<20	<20	
Zinc	42.00	<20	<20	<20	
Boron	1045.00	33.00	<20	<20	
Cadmium	<20	<20	<20	<20	
Mercury		<0.2	<0.2	<0.2	
Selenium		<0.74		1.70	1.20
Barium	<20	22.00		51.00	34.00

In circumstances where water abstraction exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the wastewater works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., iardia, in the receiving water environment.

There are no abstractions from the proposed discharge points.

Indicate whether or not the emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have an effect a Natural Heritage Area, site of community importance under the habitats directive, special area of conservation or a site classified under the conservation of wildbirds directive.

It is not considered that the emissions for the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have an effect a Natural Heritage Area, site of community importance under the habitats directive, special area of conservation or a site classified under the conservation of wildbirds directive.

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

Given the nature and scale of the discharges to the receiving environment it is not considered necessary to provide any additional measures specific to minimising pollution over long distances or in the territory of other states.

Details of any modelling of discharges from the agglomeration.

No modelling has been undertaken of the discharges from the agglomeration.

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	Agglomeration Served	Abstraction Volume in m ³ /day	Point Code Provide label IDs	Distance Downstream in meters from emission point to abstraction point	6E- Digit GPS National Irish Grid Reference	6N- Digit GPS National Irish Grid Reference	Y = GPS Used 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 discharge point is discharged to the Blarney River, the effluent from the secondary discharge point is discharged to a nearby stream which joins the Blarney River. The Blarney River joins the River Martin which in turn joins the River Shournagh downstream of the discharge point from the WWTP.

There are no water abstractions from the Rivers Blarney, Martin and Shournagh, although water is abstracted from the River Lee, several kilometres downstream. It is noted that the River Blarney is not a direct tributary of the River Lee – there are a series of tributaries discharging into larger rivers before water abstraction occurs.

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.

For inspection purposes only.
Consent of copyright owner required for any other use.

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).

Dangerous Substances Directive 2006/11/EC

A screening programme was undertaken for all of the substances listed in S.I. No 12/2001 – Water Quality (Dangerous Substances) Regulations, 2001 with the exception of tributyltin and fluoride.

The assessment for atrazine, dichloromethane, simazine, toluene, xylenes, arsenic, chromium, lead and nickel showed that the discharge from the WWTP, the upstream and downstream river samples were all below the level required by the Regulations.

The plant is operating satisfactory at present and is operating within the requirements of the relevant legislation, outlined above. With future development in Killeens the treatment plant needs to be upgraded and this is currently under construction.

The upgrade of the treatment plant includes the installation of an automated inlet fine screen, a storm tank, primary settlement WAS pumps, a new RBC, a secondary settlement tank, chemical dosing for phosphorus removal, a sludge holding tank and a tertiary treatment system based on a gravity sand filter.

Water Framework Directive 2000/60/EC

The Blarney River has been determined to have Moderate Status under the Water Framework Directive. A point source risk is noted based on insufficient capacity for existing and future (2015) discharges.

The assimilative capacity assessments set out in Section F1 demonstrate that the current discharge is not compliant with the water framework directive. However based on the assimilative capacity assessments compliance will be achieved once the new WWTP is operational. The upgraded plant will provide an enhanced level of treatment including tertiary treatment and phosphorus removal with effluent discharge standards as follows:

BOD – 10mg/l
SS – 35mg/l
Ortho P – 1mg/l

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 Blarney River. There are areas of the River Martin, the River Shournagh and the River Lee which are designated SPAs however these are located downstream 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

Drinking Water Directives 80/778/EEC

There are no drinking water abstractions on the Blarney River, the River Martin or on the River Shournagh.

Urban Waste Water Treatment Directive 91/271/EEC

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

The Regulations require that waste water arising from populations of less than 2000, shall, by the end of 2005, be subject to appropriate treatment prior to discharge. Appropriate treatment is defined as:

“...any process and / or disposal system which after discharge allows the receiving waters to meet the relevant quality objectives and the relevant provisions of the Directive and of other community Directives”

Construction of the proposed Killeens Waste Water Treatment Plant is due to be completed in April 2009 and is designed to treat effluent to a 10mg/l BOD; 35mg/l SS and 1mg/l Ortho P standard. These standards have been adopted to ensure compliance with the requirements of the Waste Water Treatment Regulations (S.I. 254 of 2001) as set out above.

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 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 Blarney River is not a designated Sensitive Area. The rivers downstream including the River Martin, the River Shournagh and the River Lee are also not designated sensitive areas.

Shellfish Directive 79/923/EEC

The Blarney River is not a designated Shellfish Area under the Shellfish Waters Regulations, S.I. 200 of 1994. The River Shournagh, into which the Blarney River flows (after joining the River Martin), 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 cSAC is designated on the basis of the presence of a large number of EU Habitats Directive Annex 1 habitats and Annex 2 species.

None of the rivers in this area are cSACs, this includes the River Lee.

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 Waste Water Laboratory carries out monitoring of the effluent from the waste water 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 Blarney River 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 Killeens 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 existing WWTP does not incorporate phosphorus removal facilities. The plant discharges to the Blarney River which has Moderate Status under the Water Framework Directive. The Draft European Communities Environmental Objectives (Surface Waters) Regulations 2008 set out in Table 9 the requirement to achieve a Molbydate Reactive Phosphorus (MRP) of ≤ 0.035 mg/l based on mean flows for River Water Bodies classified as having Good Status. This is not achieved however it is noted that this plant is to be decommissioned shortly.

The upgraded WWTP will incorporate phosphorus removal facilities. Based on the assimilative capacity assessment this will decrease the concentrations of Phosphorous in the receiving waters.

The EPA have one monitoring station on the Blarney River, downstream of the discharge location. The Q value of the Blarney River at this point is 4. The objective of the SWRBD report is to restore the water quality.

Effluent Standards

The treated effluent quality requirements are determined with respect to the EC Urban Waste Water Directive, given effect in Irish Law by S.I.254 of 2001. The waste water treatment processes should reduce nutrients in the final effluent. The minimum effluent standard based on S.I.254 of 2001 for Phosphorus in waste water effluent is 2mg/l. Due to the existing background levels the discharge from the upgraded WWTP has been set to a 1mg/l limit.

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.

Currently a upgrade to the Waste Water Treatment Plant is under construction. The upgraded treatment plant includes phosphorus removal through ferric dosing.

The construction of the new WWTP is well advanced with commissioning due in April 2009.

Based on the assimilative capacity assessments the upgraded plant will lead to an improvement in the chemical and ecological status of the Blarney River.

Discharges from the proposed WWTP will not affect groundwater.

There are no Special Areas of Conservation, Special Protection Areas, Natural Heritage Areas or European Sites which discharges from the proposed WWTP will affect. Nor are there any designated bathing waters, areas designated for the protection of shellfish or fresh water fish, or any water abstraction locations intended for human consumption that will be affected by the proposed WWTP discharges..

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

Attachment included	Yes	No
	√	

G.4 Storm Water Overflow

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

There are no storm water overflows within the agglomeration other that those from the existing primary discharge. The proposed plant will have a secondary discharge point comprising storm water overflows. The proposed WWTP will provide for storm water storage (1.3 Hours retention) and all storm water overflows will be screened to 6mm.

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 : Patricia Power **Date :** 24th Feb 09
(on behalf of the organisation)

Print signature name: PATRICIA POWER

Position in organisation: Director of Services

For inspection purposes only
Consent of copyright owner required for any other use.

Attachments Table of Contents:

Attachment	Description
A1 Map 1	1:25,000 Location Map
A1 Map 2	Site Location of WWTP & Pumping Stations
A1 Map 3	Existing Site Layout
A1 Map 4	Proposed Site Layout
B1 Map 5	Agglomeration Boundary
B2 Map 6	Location of WWTP
B3 Map 7	Location of Primary Discharge Point
B4 Map 8	Location of Secondary discharge Points
B5	Not Applicable
B6	Part VIII Planning
B7	Not Applicable
B8 Map 9	Location of Site Notice
B8	Notice and Advertisement
B10	WSIP Programme
B11	Not Applicable
B12	Not Applicable
C1 Map 10	Location of WWTP
C1 Drg 1	Schematic Showing Existing Treatment Plant Process
C1 Drg 2	Schematic Showing Proposed Treatment Plant Process
C2 Map 11	Location of Discharge Outfalls
Section D2	Discharge Points
E2	Details of Accreditation or Certification of Analysis
Section E3	Monitoring & Sampling Points
E4	Monitoring Data
F1	Laboratory Test Results SWRBD Status Report Upstream & Downstream Sampling Data
F1 Map 13	Extent of the Water Body (River Blarney)
F2	Not Applicable
G1	WSIP Programme
G2	WSIP Programme Laboratory Test Results
G3	WSIP Programme
G4	Not Applicable
Online Data	Online data submitted to the EPA including Annex