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To : Environmental Protection Agency,
Johnstown Castle.

19th September, 2008

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

Dear Sir/Madam,

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

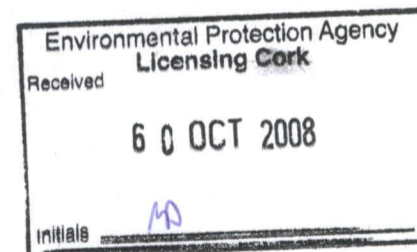
The following documentation is enclosed :

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

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

Signed :


Thomas G. Stritch
DIRECTOR OF SERVICES (Northern Division)



This is a draft document and is subject to revision.



Waste Water Discharge Licence Application Form

EPA Ref. N^o:
(Office use only)

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Environmental Protection Agency

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

Tracking Amendments to Draft Application Form

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

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

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

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Waste Water Discharge Authorisation Application Form

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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.

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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**

Charleville is located in County Cork close to the County Limerick border. Charleville's high quality agricultural land in its hinterland has facilitated the food-based industries now established there. The Local Area Plans strategic aims for Charleville are to encourage its potential as an important centre for employment, commercial and industrial location and exploit its position for transport connections.

Description of the Wastewater Treatment Works

Charleville Wastewater Treatment Works was constructed on a green field site in the townland of Ballincolly, to the north east of Charleville. The area of the site is approximately 3.6 hectares. The plant is manned 08.30 to 17.00 from Monday to Friday.

The treatment plant is designed to cater for a population equivalent (p.e.) of up to 15,000. The design dry weather flow (DWF) for the plant is 2,050 m³/day. This equates to an average flow of 85 m³/hr. The p.e. and DWF are based on measured foul flows (1973). It is noted that the latest census, 2006, quotes a population for Charleville of 2,984.

A provision has been made in the design of the plant to allow for expansion to 30,000 p.e. should it be required in the future.

Flows to the treatment plant are discharged into the inlet flume, which contains screens and flow controls. Following screening, the inlet flume allows 510 m³/hr (6DWF) to pass into the splitter chamber. At present the plant is capable of

handling 6DWF. Flows in excess of this, overflow directly to Charleville Stream from the inlet flume of the treatment plant.

In the intended design, influent flows to the splitter chamber, and is divided evenly between two oxidation ditches as the design of the treatment plant is such that two separate process streams are provided. The design ensures that each stream can be operated in isolation, allowing the continuous treatment of wastewater while also enabling maintenance and repair work of the plant to be carried out. Given that the loading on the treatment plant is far less than it is designed for, the plant usually only operates one stream at a given time.

In each oxidation ditch, 4no. 7m rotors are used to ensure that sludge remains in suspension at all times. From the ditches, the flow passes to the two clarifiers for the purpose of settling sludge.

The sludge from the aeration and clarifier tanks is drawn off and passed to a picket fence thickener and then to the sludge dewatering building. Storage in bins is provided on site and the sludge is removed once a week. The sludge is collected by farmers to be spread on the land. During times of year when spreading is restricted, the sludge is taken to the sludge storage lagoon at Kanturk Wastewater Treatment Plant.

The effluent from the clarifiers is passed to the 600mm treatment plant outlet pipe and to Charleville Stream. Final effluent sampling and measurement takes place in the outlet flume.

Sources of Emissions from the Wastewater Treatment Works

The wastewater from Charleville town and environs is collected through a pipe network and flows by gravity to the wastewater treatment plant in the townland of Ballincolly north-east of the town centre. The main source of emissions is the 600mm diameter discharge pipe carrying the treated effluent from the wastewater treatment plant to Charleville Stream. Charleville Stream flows along the eastern boundary of the treatment plant.

The maximum flow to the treatment plant is 12,300m³/day. Flows in excess of this are discharged via a 600mm diameter overflow pipe from the inlet flume directly to the Charleville Stream.

There are two overflow manholes located within the pipe network. A 225mm diameter pipe is located at a manhole on Glen Bridge, which allows overflows directly into Charleville Stream. There is also a 600mm diameter overflow pipe from a manhole located in the fire station, which overflows to the Old Mill Race.

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

The flow from the wastewater treatment plant varies from the design dry weather flow of 2,050m³/day to the maximum capacity of the treatment plant, which is 6 DWF (12,300m³/day).

The processes at the treatment plant produce an effluent, which satisfies the requirements of EC directive 91/271/EEC concerning Urban Wastewater Treatment (SI 491 of 1994 as amended SI 254 of 2001). The applicable effluent standards as defined in the Directive are shown below.

Table A1-1: Minimum Effluent Standards based on S.I.254 of 2001 and Recorded effluent Concentrations

Parameter	Effluent Standards (mg/l)	Actual Concentrations* (mg/l)
Biological Oxygen Demand (BOD)	25	4.959
Suspended Solids (SS)	35	8.75
Orthophosphate	2	0.698

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08.

From the above table, it is evident that treated effluent from Charleville Wastewater Treatment Plant is compliant with the quality of effluent standards set out by the above legislation.

A wastewater assimilative capacity assessment was carried out using all available flow and water quality data. A detailed description of this assessment is completed in Section F1.

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

The sewerage system in Charleville is primarily a separate storm and foul system.

The industries, which exist in Charleville, have separate wastewater treatment plants and for the most part do not contribute to the flow in the foul sewer system. The surface water in Charleville generally drains directly to the river, therefore not overloading the wastewater treatment plant.

The treatment works include the following elements:

- Inlet Flume
- Screening
- Splitter Chamber
- Oxidation Ditches
- Settling Tanks
- Picket Fence Thickener
- Sludge Dewatering House
- Outfall to Charleville Stream

The screen was an addition to the treatment plant in 2006 to improve the quality of the effluent from the plant. There are three overflows throughout the system and these are located below Glen Bridge, in the treatment plant and behind the town's fire station flowing into the Old Mill Race. The overflows only come into use in flows exceeding 6DWF, which arise during wet periods when infiltration is occurring.

The Charleville Local Area Plan 2005-2011, states that the existing wastewater treatment plant has sufficient capacity to cater for the newly zoned residential lands however any industry in the new industrial areas will require separate wastewater treatment plants or an expansion of the existing town wastewater treatment plant.

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

The Water Services Investment Programme 2007-2009 does not allocate any funding for improvements to the Charleville Wastewater Treatment Plant.

The most recent upgrade to the plant was the addition of a 6mm Kuhn Step Screen and Wash Press unit in 2006.

A wastewater assimilative capacity assessment was carried out for the Charleville wastewater treatment plant. The background concentration levels of nutrients were estimated from data collected by Cork County Council wastewater laboratory in 2007 and 2008. Based on this data Charleville wastewater treatment plant does not appear to be having a major negative effect on the existing river quality of Charleville Stream. Therefore the basic obligations of the operator are being adhered to.

Measures Planned to Monitor Emissions into the Environment

The Cork County Council Environmental Laboratory carries out sampling of the influent and effluent approximately 4 times per year. The Environmental Lab also undertakes Sampling and analysis of the wastewater sludge.

The Cork County Council Environmental Department located in Inniscarra takes samples from Charleville Stream upstream and downstream of the wastewater treatment plant approximately 6 times per year. Samples of the influent and effluent are also taken at these times.

The EPA and the OPW carry out monitoring of the River Maigue and Charleville Stream. The EPA has three monitoring Stations on Charleville Stream. These are located at New Line Bridge in Charleville town, the bridge North-West of Ballincolly and just upstream of the River Maigue confluence.

Downstream of the Treatment Plant the OPW has monitoring stations on the River Maigue in Bruree, Croom, Caherass, Castleroberts and Adare Manor.

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 (SI 722 of 2003). Charleville Stream and the River Maigue are to have a number of operational monitoring sites under this monitoring programme. The River Maigue is also to have one surveillance monitoring site.

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration: Charleville and Environs

Applicant's Details

Name and Address for Correspondence

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

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

Name*:	Cork County Council Northern Division
Address:	William O'Brien Buildings
	Annabella
	Mallow
	Co. Cork
Tel:	(022) 21123
Fax:	(022) 21983
e-mail:	frank.cronin@corkcoco.ie

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

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

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

*This should be the name of person nominated by the water services authority for the purposes of the application.

Co-Applicant's Details

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

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

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

The boundary takes into account, lands serviced by the Charleville Sewerage Scheme, and lands zoned under the following plans: -

- Cork County Development Plan 2003
- Kanturk Electoral Area Local Area Plan 2005

The agglomeration boundary includes the town centre and all lands bordering the town centre, which were allowed for in the original design. All developments with granted planning permission and all developments under construction at present have also been included in the agglomeration. Some residentially zoned land is unlikely to be developed in the lifetime of this discharge licence and therefore is not included in the agglomeration.

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Attachment included	Yes	No
	✓	

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

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

Name*:	Michael Cotter
Address:	Charleville Wastewater Treatment Plant
	Ballincolly
	Charleville
	Co. Cork
Grid ref (6E, 6N)	154060E, 124412N
Level of Treatment	Secondary
Primary Telephone:	(063) 81348

Fax:	Not Applicable
e-mail:	Michael.cotter@corkcoco.ie

*This should be the name of the person responsible for the supervision of the waste water treatment plant.

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

Attachment included	Yes	No
	✓	

B.3 Location of Primary Discharge Point

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

Type of Discharge	600mm diameter outfall pipe from wastewater treatment plant. Open Pipe.
Unique Point Code	SW01-CHVE
Location	Approximately 2km North East of the town
Grid ref (6E, 6N)	154249E, 124560N

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

The final effluent from the treatment plant is discharged to a 600mm pipe, which outfalls to Charleville Stream at the primary discharge point, the location of which is shown on Drg. No. B3-04 in attachment B.3

Attachment included	Yes	No
	✓	

B.4 Location of Secondary Discharge Point(s)

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

Type of Discharge	600mm diameter overflow pipe from inlet flume of the wastewater treatment plant. Open Pipe
Unique Point Code	SW02-CHVE
Location	Approximately 2km North East of the town centre, adjacent to primary discharge point
Grid ref (6E, 6N)	154249E, 124559N

Type of Discharge	600mm diameter overflow pipe from overflow manhole at Chapel Street/Clancy Terrace intersection to Old Mill Race.
Unique Point Code	SW03-CHVE
Location	Overflow from manhole at intersection of Clancy Terrace and Chapel Street
Grid ref (6E, 6N)	153614E, 123035N

Type of Discharge	225mm diameter overflow pipe from a manhole on Glen Bridge to under Glen Bridge
Unique Point Code	SW04-CHVE
Location	Under the Glen Bridge on the main street, approximately 55n North West of GAA grounds.
Grid ref (6E, 6N)	153673E, 122489N

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

Attachment included	Yes	No
	✓	

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

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

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

Attachment B.5 should contain appropriately scaled drawings / maps (=A3) of storm water overflow point(s) associated with the waste water works, including

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

Attachment included	Yes	No
		✓

B.6 Planning Authority

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

Name:	Cork County Council
Address:	Planning Department
	County Hall
	Carrigrohane Road
	Cork
Tel:	(021) 4276891
Fax:	(021) 4867007
e-mail:	Not Applicable

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

has been obtained		is being processed	
is not yet applied for		is not required	✓

Local Authority Planning File Reference N^o:	Not Applicable
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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.

No planning permission or EIS was required for Kanturk Wastewater Treatment Plant at the time of construction.

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 Services Executive North
Address:	North Cork Area Head Quarters
	Gouldshill, Mallow
	Co.Cork
Tel:	(022) 30200
Fax:	(022) 30211
e-mail:	Jerry.oconnell@hse.ie

B.7 (iii) Other Relevant Water Services Authorities

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

Name:	Limerick County Council
Address:	County Hall
	Dooradoyle
	Limerick
Tel:	(061) 496326
Fax:	Not Applicable
e-mail:	water@limerickcco.ie

Relevant Authority Notified	Yes	No
	✓	

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

Under Regulation 13 of the Waste Water Discharge (Authorisation) Regulations, 2007, Cork County Council notified Limerick County Council in writing of their intention to apply to the Environmental Protection Agency for a Waste Water Discharge Licence for Charleville Wastewater Treatment Plant at Ballincolly.

The attachment contains a copy of the letter sent to Limerick County Council under Regulation 13.

Attachment included	Yes	No
	✓	

B.8 Notices and Advertisements

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

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

Attachment included	Yes	No
	✓	

B.9 (i) Population Equivalent of Agglomeration

TABLE B.9.1 POPULATION EQUIVALENT OF AGGLOMERATION

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

Population Equivalent	5134
Data Compiled (Year)	2006 Census (2008 Planning Permissions)
Method	See below

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 population equivalent is based on census figures compiled in 2006 by the Central Statistics Office. All developments with granted planning permission and all developments under construction at present have also been included in the agglomeration. Some residentially zoned land is unlikely to be developed in the

lifetime of this discharge licence and therefore is not included in the agglomeration. There are no industries with an IPPC licence or Cork County Council discharge licence, discharging to the wastewater network in Charleville.

The additional p.e. due to granted planning permissions is estimated to be 2150, based on 2.9 people per dwelling as recommended by Kanturk Electoral Area Local Area Plan 2005. There are currently no planning permissions granted in relation to non-domestic activities.

At present Charleville wastewater treatment plant is operating at half its potential capacity. Therefore the plant has adequate capacity to accommodate the extra hydraulic and organic loading without posing additional environmental risk to the receiving 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 €)
Discharges from agglomerations with a population equivalent of 2,001 to 10,000	25,000

Appropriate Fee Included	Yes	No
	✓	

B.10 Capital Investment Programme

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

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.

The most recent national Water Services Investment Programme (2007-2009) does not have any listings of the Charleville Sewerage Scheme or Wastewater Treatment Plant. Attachment B.10 contains the Cork County page of the WSIP, which shows the planned projects in the Water Services Investment Programme 2007-2009

Attachment included	Yes	No
	✓	

B.11 Significant Correspondence

Provide a summary of any correspondence resulting from a Section 63 notice issued by the Agency in relation to the waste water works under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

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

There was no Section 63 notice issued by the Environmental Protection Agency to Cork County Council in relation to the waste water works in Charleville under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

Attachment included	Yes	No
		✓

B.12 Foreshore Act Licences.

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

Attachment B.12 should contain the most recent licence issued under the 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.

Charleville Wastewater Works does not require a Foreshore Act Licence under the Foreshore Act 1933.

Attachment included	Yes	No
		✓

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SECTION C: INFRASTRUCTURE & OPERATION

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

C.1 Operational Information Requirements

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

C.1.1 Storm Water Overflows

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

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

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.

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.

Charleville Wastewater Treatment Plant was constructed on a green field site in the townland of Ballincolly, 2km north-east of the town centre. The area of the site is approximately 3.6 hectares.

The plant has the hydraulic design capacity to treat wastewater discharges from up to 15,000 population equivalent. The design dry weather flow (DWF) for the plant is 2,050 m³/day, which is based on measured flows (1973). This equates to an average flow of 85 m³/hr.

A provision has been made in the design of the plant to allow for expansion to 30,000 p.e. should it be required in the future.

Design Capacity

The design DWF to the plant is 2050m³/day based on a population equivalent of 15,000. The design population equivalent is derived from the B.O.D. loading to the old treatment plant recorded in 1973.

The following flows were considered in the design of the treatment plant;

The plant was designed to cater for 820kg/day B.O.D. This loading took account of the flow in sewers, the Old Mill Race and the developments under planning applications in 1973. The spare capacity (160kg) allowed for 50acres of industrial development.

The treatment plant site allows for expansion, with the addition of 2 more oxidation ditches and settling tanks giving an additional 820kg/day capacity to cover town growth and industrial development. As of yet this extension has not been required.

Table C1-2: WWTP Limitations

	Stage 1	Future Expansion
Population Equivalent	15,000	30,000
B.O.D Loading	820kg/day	1640kg/day
DWF	2050m ³ /day	4100m ³ /day

Plant Process

The treatment works include the following elements:

- Inlet Flume
- Screening
- Splitter Chamber
- Oxidation Ditches
- Settling Tanks
- Picket Fence Thickener
- Sludge Dewatering House
- Drying Beds
- Outfall to Charleville Stream

Preliminary Treatment

Flows from Charleville town and environs flow by gravity to the treatment plant in Ballincolly. A screen located within the inlet flume removes larger inorganic solid material. The Kuhn Step Screen & Wash Press was put in place in 2006 and prior to this instalment there was no preliminary treatment at the plant.

An overflow (SW02-CHVE) is located in the inlet flume to the treatment plant and this is identified on drawing no. B4-07.

Secondary Treatment

The secondary treatment process is based on activated sludge system. The aeration system at the plant is in the form of oxidation ditches. Each oxidation ditch is 4500m³ and contains 4no. 7.0m long rotors. The volume of the ditches allows for 48hours retention of the DWF.

The oxidation ditches shall operate at MLSS concentrations below 0.21kg/m³. Suitable dissolved oxygen (DO) measurement and recording shall be provided. Sludge return system is in operation to ensure an adequate level of mixed liquor suspended solids. The system is flexible enough to ensure that sludge can be returned from the clarifiers to the oxidation ditches and an adequate quantity of sludge can be pumped at all times.

The mixed liquor produced from the aeration system enters secondary clarifiers for the purpose of settling sludge. Each oxidation ditch has a dedicated clarifier. Each clarifier is circular (160m²) and equipped with a rotating bridge sludge scraper, inlet, scum and sludge draw-off pipes, sludge return pipe work, v-notch weir and a system to prevent scum entering the treated effluent. The maximum upward velocity of the settling tanks is 1.6m/hr at 6DWF.

The wastewater treatment system has two separate process streams with provision to isolate each stream. At present only one stream of the treatment plant is in use, as flows have not necessitated the treatment plant to be used at full capacity.

The treated effluent flows to the outlet flume, where flow-measuring equipment is in place, and is then discharged to Charleville Stream through a 600mm diameter outlet pipe.

Leachate

Leachate from Ballguyroe landfill is treated at Charleville Wastewater Treatment Plant. The leachate is delivered by 6000-gallon trucks and pumped directly into the unused oxidation ditch where it is treated. From this ditch the leachate is then discharged to the main oxidation ditch and treated as regular foul water.

The quantity of leachate delivered to the plant equates to approximately 40m³/day depending on weather. It is estimated the population equivalent for the leachate ranges from 15 p.e. to 80 p.e. depending on time of year.

Sludge Treatment

A picket fence thickener is installed in the treatment plant. The primary and secondary sludges are pumped to the sludge-thickening tank where the sludge is thickened to approximately 4% dry solids. The liquid discharge from this tank is returned to the oxidation ditch. The sludge is dewatered after thickening so that its solids content is approximately 16% solids content. This takes place in a separate dewatering building. Although there are sludge drying beds at the plant, these are no longer in use.

The sludge is transported from Charleville Wastewater Treatment Plant on a weekly basis and is given to farmers to spread on the land. If the time of year prevents the spreading of slurry, it is transported to Kanturk Wastewater Treatment plant where it is stored in the sludge storage lagoon.

The processes at the treatment plant produce an effluent, which satisfies the requirements of EC Directive 91/271/EEC concerning Urban Wastewater Treatment (S.I. 491 of 1994 as amended by S.I. 254 of 2001). The applicable effluent standards as defined in the Directive are shown below.

Table C1-3: Minimum Effluent Standards based on SI 254 of 2001

Parameter	Concentration (mg/l)	Min. Percentage Reduction
Biological Oxygen Demand (BOD)	25	70-90
Chemical Oxygen Demand (COD)	125	75
Suspended Solids	35	90

Process Control Systems

A 600mm diameter overflow pipe exists to carry flows greater than 6DWF from the inlet flume directly to the outlet. Flow measurement devices are in place at the inlet flume.

No retention tanks exist in the Charleville wastewater treatment plant.

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.

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.

Primary Discharge Point: SW01-CHVE

Type of Discharge	600 mm diameter outfall pipe from Waste Water Treatment Works at discharge point. Open Pipe
Unique Point Code	SW01-CHVE
Location	Approximately 2km North East of the Town Centre
Grid ref (6E, 6N)	154249E, 124560N

The primary discharge point, SW01-CHVE, is the main outlet from Charleville Wastewater Treatment Plant. The outfall runs in a North East direction approximately 50m from the outlet flume to Charleville stream, which flows along the Eastern perimeter of the plant. The point of discharge is an open pipe at a headwall, which has been constructed at the discharge point in accordance with Drg.No.C2-12 of this attachment. The invert level at the point of discharge

is 70.49 mOD (Dublin Bay) and is above water level. SW01-CHVE is shown in Photograph No.C2-01.

Secondary Discharge Point: SW02-CHVE

Type of Discharge	600 mm diameter outfall pipe from the inlet flume in the Waste Water Treatment Plant. Open Pipe
Unique Point Code	SW02-CHVE
Location	Approximately 2km North East of the Town Centre
Grid ref (6E, 6N)	154249E, 124559N

The secondary discharge point, SW02-CHVE is an open pipe overflow from the inlet flume of the wastewater treatment plant. The overflow pipe runs along the perimeter of the treatment plant for approximately 250m and discharges into Charleville Stream adjacent to the primary outfall. SW02-CHVE is also shown in Photograph No.C2-01.

Secondary Discharge Point: SW03-CHVE

Type of Discharge	600 mm diameter outfall pipe from the junction of Killmallock Road and Clancy Terrace to the Old Mill Race. Open Pipe
Unique Point Code	SW03-CHVE
Location	Approximately 30m North of the Fire Station on Killmallock Road
Grid ref (6E, 6N)	153614E, 123035N

The secondary discharge point SW03-CHVE, is an open pipe overflow from the overflow manhole at the junction between Killmallock Road and Clancy Street. The overflow runs approximately 80m North behind the Fire Station and then East into the Old Mill Race that flows to Charleville Stream.

Secondary Discharge Point: SW04-CHVE

Type of Discharge	225mm diameter outfall pipe beneath Glen Bridge on Main Street. Open Pipe
Unique Point Code	SW04-CHVE
Location	Beneath the Glen Bridge on Main Street, approximately 55m North West of the GAA grounds.
Grid ref (6E, 6N)	153673E, 122489N

The secondary discharge point SW04-CHVE, is an open pipe overflow beneath Glen Bridge on Main Street. It flows from an overflow manhole on the south-western side of the bridge, into Charleville Stream (also called the Glen River).

No detailed design or construction details are available for SW03CHVE and SW04CHVE.

Attachment included	Yes	No
	✓	

SECTION D: DISCHARGES TO THE AQUATIC ENVIRONMENT

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

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

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

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

D.1 Discharges to Surface Waters

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables D.1(i)(a), (b) & (c), should be completed for the primary discharge point from the agglomeration and Tables D.1(ii)(a), (b) & (c) should be completed for **each** secondary discharge point, where relevant. Table D.1(iii)(a) should be completed for **each** storm water overflow. Individual Tables must be completed for each discharge point.

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

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

Attachment included	Yes	No

D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

Table D.2:

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
SW01-CHVE	Primary	Cork County Council	River	Charleville Stream	No Designation	152449	124560
SW02-CHVE	Secondary	Cork County Council	River	Charleville Stream	No Designation	154249	124559
SW03-CHVE	Secondary	Cork County Council	River	Charleville Stream	No Designation	153614	123035
SW04-CHVE	Secondary	Cork County Council	River	Charleville Stream	No Designation	153673	122489

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.

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SECTION E: MONITORING

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

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

Provide an estimation of the quantity of waste water likely to be emitted in relation to all primary and secondary discharge points applied for. This information should be included in Table E.1(i) via the following web based link: http://78.137.160.73/epa_wwd_licensing/.

Provide an estimation of the quantity of waste water likely to be emitted in relation to all storm water overflows within the agglomeration applied for. This information should be included in Table E.1(ii) via the following web based link: http://78.137.160.73/epa_wwd_licensing/.

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

E.2. Monitoring and Sampling Points

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

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

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

Details of any accreditation or certification of analysis should be included.

Attachment E.2 should contain any supporting information.

Attachment included	Yes	No

E.3. Tabular data on Monitoring and Sampling Points

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

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
aSW1u-CHVE	Primary	S	154254	124540	N
aSW1d-CHVE	Primary	S	154297	124678	N

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

E.4 Sampling Data

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

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

Attachment E.4 should contain any supporting information.

Attachment included	Yes	No

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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.

- o 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.
- o Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.
- o In circumstances where water abstraction points exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia, in the receiving water environment.
- o 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**.

The plant is performing satisfactorily at present and operating within the requirements of the following legislation. There are no improvements planned at present for the Charleville Wastewater Treatment Plant.

Water Quality Standards

The Water Framework Directive (WFD) aims to establish an integrated approach to water protection, improvement and sustainable use. In order to achieve the requirements of the WFD, Ireland has been divided into a number of River Basin Districts or management units. Charleville lies within the Shannon International River Basin District. This is the largest River Basin District in Ireland at more than 18,000 km² in area. It covers the natural drainage basin of the Shannon river itself, stretching from the source of the River Shannon in the Cuilcagh mountains in Counties Cavan and Fermanagh to the tip of the Dingle peninsula in north Kerry. It also includes coastal parts of Kerry and Clare, which drain to the sea. It flows through 18 local authority areas.

The Shannon IRBD Project has been established by the Department of Environment, Heritage and Local Government to assist the local authorities in implementing the Directive. The Water Framework Directive requires all member states to protect and manage their water resources on the natural, geographic boundaries i.e. the river catchment or basin. The key objectives of the Water Framework Directive for the Shannon International River Basin District (IRBD) are aimed at:

- maintaining "high status" of waters where it exists;
- preventing any deterioration in the existing status of waters and;
- achieving at least "good status" in relation to all waters in the Shannon IRBD by 2015.

These objectives will be achieved through the development of a management plan for the Shannon IRBD.

The Shannon IRBD have yet to set water quality standards for Charleville Stream and the River Maigue under a water quality or catchment management plan. The River Basin Management System currently being developed will include a programme of measures and a River Basin Management Strategy, designed to achieve at least good status for all waters by 2015, and to maintain high status where it exists. Therefore discharges from Charleville Wastewater Treatment Plant cannot cause deterioration in good water quality under the Water Framework Directive at present.

Neither Charleville Stream nor the River Maigue into which it flows are designated Bathing Waters under the Bathing Water Regulations, S.I. 155 of 1992 as amended.

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

Charleville Stream and the River Maigue are not designated Salmonid Waters under Salmonid Water Regulations, S.I. 293 of 1988.

Charleville Stream and the River Maigue are not designated Sensitive Areas under the Urban Wastewater Treatment Regulations 2001 (S.I. 254 of 2001).

There is an abstraction point of water intended for human consumption at Adare. The Adare abstraction point is approximately 27km downstream of Charleville WWTP. There are wastewater treatment plants at Bruree, Banogue and Croom located adjacent the River Maigue which are likely to be discharging to the river. These are located downstream of Charleville WWTP and upstream of the Adare drinking water abstraction.

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 Lower River Shannon cSAC (Site Code: 002165) is very large and extends from Killaloe to Loop Head/Kerry Head, a distance of 120km. The site encompasses the Shannon, Feale, Mulkear and Fergus Estuaries, the Freshwater Lower reaches of the River Shannon (between Killaloe and Limerick), the freshwater stretches of much of the Feale and Mulkear catchments and the marine area between Loop Head and Kerry Head. Within this site there are several tributaries with their own "sub-estuaries" including the River Maigue.

The site is a cSAC selected for lagoons and alluvial wet woodlands, both habitats listed on Annex I of the E.U. Habitats Directive and other Annex I habitats such as floating river vegetation, Molinia meadows, estuaries, tidal mudflats and Atlantic Salt meadows. Directive. The site is also selected for the following species listed on the Annex II of the same directive – Sea Lamprey, River Lamprey, Brook Lamprey, Freshwater Pearl mussel, Atlantic Salmon and Otter.

The River Maigue is designated under the Lower River Shannon SAC as far as the town of Adare, which is over 25km from the wastewater treatment plant, and therefore this does not affect the discharges.

The Lower River Shannon Site Synopsis is included in this attachment.

Natural Heritage Areas

The Charleville Stream and the River Maigue do not flow through any Natural Heritage Area (NHA). Natural Heritage Areas are the basic designation for

wildlife. An NHA is an area considered important for the habitats present or which holds species of plants and animals whose habitat needs protection.

Special Protected Areas

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

No designated special protected areas are located along the River Maigue or Charleville Stream. There are areas of the Lower River Shannon that are designated SPAs, however these are located after the Maigue Estuary and therefore greater than 2km from all discharge points.

Receiving Water Quality Requirement

Water Quality analysis data for Charleville Stream was obtained from Cork County Council. The EPA also takes samples from three locations along Charleville Stream in the vicinity of the treatment plant. These are located at New Line Bridge in Charleville town (u/s of plant), the bridge North West of Ballincolly (d/s of plant) and just upstream of the Maigue River confluence (d/s of plant).

The biological quality rating (Q value) for the above locations is presented for the period 1986 to 2003. The EPA biological quality rating indicates that the existing water quality upstream of the plant is moderately polluted. It is also evident that there is a slight reduction in water quality just downstream of the treatment plant. However the water quality further downstream, recorded upstream of the Maigue River confluence, improves again due to dispersion of the discharged effluent.

Table F1-2: Biological Quality Rating for Charleville Stream

Sampling Location	EPA Biological Quality Rating (Q values)						
	1982	1986	1990	1994	1997	2000	2003
New Line Br	-	-	-	3	3	2-3	3
Br NW of Ballincolly	2	2	2-3	2-3	2-3	2-3	2-3
Just u/s of Maigue River confluence	3	2	2-3	3	3	3	3

The Monitoring Station at the bridge North-West of Ballincolly (i.e. downstream of plant) has a baseline Q-rating of Q2-3. The target set in the Phosphorus Regulations Implementation Report 2006 is to achieve a Q-rating of Q3 with a target median phosphorus level of 0.07mgP/l as MRP by 2007.

The level of suspended solids allowable in the receiving waters is 25mg/l. This is based on the Freshwater Fish Directive in the absence of alternative guidelines.

The Royal Commission in its report on Water Quality Guidelines recommends, "In all circumstances effluent discharges which are calculated to raise the BOD of the receiving water, outside the mixing zone, by more than 1 mg/l should be discouraged". The average existing background level for BOD is estimated at 1.7mg/l. Therefore the receiving water limiting value for BOD for this river is 2.7mg/l.

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

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

Table F1-3: Receiving Water Quality Limiting Values

Parameter	Water Quality Standard (mg/l)
BOD	2.7
Suspended Solids	25
Phosphorus mg/l	0.07
Atrazine	0.001
Dichloromethane	300.01
Simazine	100.001
Toluene	500.01
Xylenes	1000.01
Arsenic	0.025
Copper	0.03
Cyanide	0.01
Lead	0.01
Nickel	0.05
Zinc	0.1

Effluent Standards

The treated effluent quality requirements shown in Table 4 are determined with respect to the EC Urban Wastewater Directive, given effect in Irish Law by S.I.254 of 2001.

Table F1-4: Minimum Effluent Standards based on S.I.254 of 2001 and Recorded Effluent Concentrations

Parameter	Effluent Standards (mg/l)	Actual Concentrations* (mg/l)
Biological Oxygen Demand (BOD)	25	5
Suspended Solids (SS)	35	8.75
Orthophosphate	2	1.12

*Actual Concentration is the average effluent concentrations recorded at the outlet of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08.

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

Assimilative Capacity of the Receiving Water

An assimilative capacity assessment based on a dilution model was carried out, using all available flow and water quality data. The limiting water quality standards for the Charleville and the estimated expected concentrations of the various water parameters in the stream after the treated effluent is discharged are summarized in Table 5 below.

Based on the assessment of discharges to the receiving water the concentration of SS will remain below the limiting water quality standards set for the river

under 95%-ile river flows. The concentrations of dangerous substances in both the effluent and the river are significantly lower than allowable standards.

Table F1-5: Expected Water Quality

Parameter	Background Conc. (mg/l) *	Expected Water Quality (mg/l) **	Water Quality Limiting Value (mg/l)
Biochemical Oxygen Demand	1.7	4.38	2.7
Suspended Solids	3	6.32	25
Phosphorus	0.105	0.16	0.07
Atrazine	0.000005	0.00001	0.001
Dichloromethane	0.0005	0.0005	0.01
Simazine	0.000005	0.00001	0.001
Toluene	0.0005	0.0005	0.01
Xylenes	0.0005	0.0005	0.01
Arsenic	0.02	0.00106	0.025
Copper	0.01	0.01	0.03
Cyanide	0.0025	0.0025	0.01
Lead	0.01	0.01	0.01
Nickel	0.01	0.01	0.05
Zinc	0.01	0.01	0.1

*Background Concentrations were estimated based on average concentrations recorded in the river u/s of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08

** Expected water quality calculated for a number of dates in attached Table F1-8

The expected concentration of BOD in the stream after the introduction of the WWTP discharge is 4.38mg/l. This concentration of BOD is greater than the allowable 2.7mg/l as outlined by the Royal Commission. However the expected concentration is close to the 4mg/l required by the EPA under their Water Quality Guidelines. In addition BOD levels in a river rated Q3, are described by the EPA as "high at times", therefore allowing for the BOD to be greater than 4mg/l at times.

Water quality analysis data presented in Tables 6&7 below was recorded by Cork County Council wastewater laboratory and covers a sampling period from 2007 to 2008. The upstream monitoring station is located 50m upstream of Charleville wastewater treatment plant primary discharge point. The downstream monitoring station is located 200m from the wastewater treatment plant.

Table F1-6: Upstream Water Quality

Parameter	Upstream Monitoring Station				
	02/07	05/07	09/07	02/08	04/08
Ph	8	-	8.4	8.5	-
BOD	0.5	0.5	1.68	1.31	-
SS	1.25	3	6	3	-
Ortho-Phosphate	-	-	0.33	0.09	0.08

Table F1-7: Downstream Water Quality

Parameter	Downstream Monitoring Station				
	02/07	03/07	05/07	09/07	02/08
Ph	7.8	7.9	-	8.0	8.3
BOD	7.7	2.4	2.4	7.33	5.05
SS	-	6	-	-	9
Total Phosphorus	0.43	0.3	1.24	1.94	0.66
Ortho-Phosphate	-	-	-	-	0.6

The samples in Table 7 above show elevated BOD as this station is still in the mixing zone of the wastewater discharge. The EPA monitoring station at the bridge northwest of Ballincolly is approximately 700m from the discharge point. The median level of BOD recorded by the EPA for this monitoring station was 1.7mg/l. Therefore the Charleville Stream has sufficient capacity to assimilate the levels of BOD from the wastewater.

The assessment of the impact of the phosphorus discharges based on median river flows indicates an expected water quality greater than 0.07mg/l, which is the limit set for Q3 rated river. It should be noted that the predicted nutrient levels are strongly influenced by the background levels in the Charleville Stream. The median phosphorus level in Charleville Stream is taken from EPA records and is greater than the 0.07mg/l target. This is consistent with the Cork County Council records for the upstream monitoring station.

The required level of phosphorus removal is achieved at Charleville wastewater treatment plant. The level of Ortho-Phosphate upstream of the treatment plant is greater than the required level for a Q3 rated river. Therefore the phosphorus levels remain elevated after the discharge from the wastewater treatment plant. The Phosphorus Regulations Implementation Report No.4 identifies the draining of agricultural sites and afforested areas as possible sources of the elevated phosphorus levels upstream of the treatment plant.

Discharges in Proximity of Wastewater Works

The IPPC licensed industry; Kerry Ingredients (Golden Vale) Co-op is discharging approximately 1.5km downstream of the Charleville wastewater treatment plant. Discharge from the Kerry Ingredients wastewater treatment plant is downstream of the Cork County Council and EPA monitoring points detailed above.

Attachment included	Yes	No
	✓	

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

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

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
1900PUB1027	Adare (Approx. Population 3000)	1363.8	Label not assigned	27000	147000	143000	N

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

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

Attachment F.2 should contain any supporting information.

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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).

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.

The plant is performing satisfactorily at present and operating within the requirements of the following legislation. There are no improvements planned at present for the Charleville Wastewater Treatment Plant.

Water Framework Directive 2000/60/EC

The Water Framework Directive (WFD) aims to establish an integrated approach to water protection, improvement and sustainable use. In order to achieve the requirements of the WFD, Ireland has been divided into a number of River Basin Districts or management units. Charleville lies within the Shannon International River Basin District. This is the largest River Basin District in Ireland at more than 18,000 km² in area. It covers the natural drainage basin of the Shannon river itself, stretching from the source of the River Shannon in the Cuilcagh mountains in Counties Cavan and Fermanagh to the tip of the Dingle peninsula in north Kerry. It also includes coastal parts of Kerry and Clare, which drain to the sea. It flows through 18 local authority areas.

The Shannon IRBD Project has been established by the Department of Environment, Heritage and Local Government to assist the local authorities in implementing the Directive. The Water Framework Directive requires all member states to protect and manage their water resources on the natural, geographic boundaries i.e. the river catchment or basin. The key objectives of the Water Framework Directive for the Shannon International River Basin District (IRBD) are aimed at:

- maintaining "high status" of waters where it exists;
- preventing any deterioration in the existing status of waters and;
- achieving at least "good status" in relation to all waters in the Shannon IRBD by 2015.

These objectives will be achieved through the development of a management plan for the Shannon IRBD.

Water Quality analysis data for Charleville Stream was obtained from Cork County Council. The EPA also takes samples from three locations along the stream in the vicinity of the treatment plant. These are located on the New Bridge (u/s of plant), the bridge north of Ballincolly (d/s of plant) and just upstream of the River Mague confluence (d/s of plant).

According to EPA data the existing water quality upstream of the plant was found to be unsatisfactory and moderately polluted. In general, there is a slight reduction in water quality at the station downstream of the treatment plant when compared with the station at the River Mague confluence.

Table 2 shows that certain chemical parameters are within the range expected for a high water quality. Therefore the poor quality rating for the stream is largely due to the high levels of phosphorus recorded both upstream and downstream of the treatment plant. It should be noted that the predicted nutrient levels in the stream after the discharge are strongly influenced by the background levels in the stream. Nutrient sampling carried out by Cork County Council upstream of the plant suggests the following levels in the Charleville Stream:

Table G1-2: Upstream Water Quality

Parameter	Upstream Monitoring Station				
	02/07	05/07	09/07	02/07	04/08
Ph	8		8.4	8.5	-
BOD	0.5	0.5	1.68	1.31	-
SS	1.25	3	6	3	-
Ortho-Phosphate	-	-	0.33	0.09	0.08

The EPA assigned a baseline Q-rating in 1995 of Q-3 for the monitoring station at New Line Bridge (u/s of plant). The median phosphorus level recorded by the EPA in 2003 for this location was 0.105mg/l. This is consistent with a Q-2 rating. Based on the above samples and EPA records the river quality has deteriorated upstream of Charleville wastewater treatment plant. Therefore although the wastewater treatment plant may be performing efficiently the stream remains polluted due to other factors upstream of the plant.

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 Charleville Stream or the River Mague, which the stream flows into.

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 of the wastewater treatment plant. The closest town along the river, which utilise ground water for a water supply, is Croom. This is located approximately 20km from the Charleville wastewater treatment plant discharge point. In addition the River Loobagh, the Morningstar River and the River Camoge River join the River Maigne upstream of the groundwater abstraction.

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

Drinking Water Directives 80/778/EEC

There is an abstraction point of water intended for human consumption at Adare. The Adare abstraction point is approximately 27km downstream of Charleville WWTP. There are a number of wastewater treatment plants downstream of Charleville wastewater treatment plant. Due to their proximity to the river it is assumed the following wastewater treatment plants are also discharging to the River Maigne upstream of the Adare drinking water abstraction: Bruree WWTP, Banogue WWTP and Croom WWTP.

Urban Waste Water Treatment Directive 91/271/EEC

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

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

The Charleville Wastewater Treatment Plant was commissioned in the eighties and was designed to treat effluent to a 20/30ppm standard.

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

Table G1-3: Minimum Effluent Standards based on SI 254 of 2001

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

The aeration and clarifying plant at the Charleville wastewater treatment plant is treating effluent to a high standard. Efficiencies of BOD, COD and SS removal for the plant is typically in excess of 90%. The effect of the discharges on the quality of the receiving waters is assessed in Attachment F1.

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

Article 4(2)(a) states that all discharges into Sensitive Areas require more stringent treatment than secondary treatment. Charleville Stream and the River Maigue are not designated Sensitive Areas.

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

Shellfish Directive 79/923/EEC

The Charleville Stream is not a designated Shellfish area under the Shellfish Waters Regulations, S.I.200 of 1994. The River Maigue, into which the Charleville Stream flows, 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. Many of these are estuarine habitats and species found only in the lower reaches of the River Shannon.

The Lower Shannon River cSAC (Site Code: 002165) extends from Killaloe along the River Shannon to Loop head/Kerry head. It also encompasses the lower reaches of the Rivers Deel, Mulkear and Maigue. The River Maigue is designated under the Lower River Shannon SAC as far as the town of Adare, which is over 25km from the wastewater treatment plant, and therefore this does not affect the discharges.

Environmental Liabilities Directive 2004/35/EC

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

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

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

Bathing Water Directive 76/160/EEC

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

Dangerous Substances Directive 2006/11/EC

The level of dangerous substances in both the effluent discharged from Charleville wastewater treatment plant and the stream itself are lower than the concentration limits set in the directive. As discussed in Section F1 Lead and Nickel are slightly greater than the required water quality limit however this is due to the restricted limit of detection of the testing method.

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.

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

The Water Services Investment Programme 2007-2009 does not allocate any funding for improvements to the Charleville Wastewater Treatment Plant.

The most recent upgrades that were made to the plant were in 2006. A 6mm step screen and wash press was put in place at the plant as preliminary treatment.

Receiving Water Quality Requirement based on Phosphorus Regulations 2008

Water Quality analysis data for Charleville Stream was obtained from Cork County Council. The EPA also takes samples from three locations along Charleville Stream in the vicinity of the treatment plant. These are located at New Line Bridge in Charleville town (u/s of plant), the bridge North West of Ballincolly (d/s of plant) and just upstream of the Maigne River confluence (d/s of plant).

The biological quality rating (Q value) for the above locations is presented for the period 1986 to 2003. The EPA biological quality rating indicates that the

existing water quality upstream of the plant is moderately polluted. It is also evident that there is a slight reduction in water quality just downstream of the treatment plant. However the water quality further downstream, recorded upstream of the Maigne River confluence, improves again due to dispersion of the discharged effluent.

Table G2-2: Biological Quality Rating for Charleville Stream

Sampling Location	EPA Biological Quality Rating (Q values)						
	1982	1986	1990	1994	1997	2000	2003
New Line Br	-	-	-	3	3	2-3	3
Br NW of Ballincolly	2	2	2-3	2-3	2-3	2-3	2-3
Just u/s of Maigne River confl	3	2	2-3	3	3	3	3

The Monitoring Station at the bridge North-West of Ballincolly (i.e. downstream of plant) has a baseline Q-rating of Q2-3. The target set in the Phosphorus Regulations Implementation Report 2008 is to achieve a Q-rating of Q3 with a target median phosphorus level of 0.07mgP/l as MRP by 2007. Therefore the principal receiving water quality requirement for phosphorus is 0.07mg/l.

Effluent Standards

The treated effluent quality requirements are determined with respect to the EC Urban Wastewater Directive, given effect in Irish Law by S.I.254 of 2001. The wastewater treatment processes should reduce nutrients in the final effluent. Charleville Stream and the River Maigne are not designated Sensitive Areas under this law.

As a natural consequence of secondary treatment, there will be an uptake of phosphorous for biomass synthesis at the wastewater treatment plant in Charleville. This is evident from Tables 3&4 below showing the uptake of phosphorus through the wastewater treatment plant. In addition to the flow of Ortho-Phosphate recorded at the inlet, the leachate treated at the plant can contain phosphorus in concentrations from 0.025mg/l to 6mg/l. Therefore the percentage removal of phosphorus in the secondary treatment is potentially far greater than the tables below suggest.

Table G2-3: Phosphorus Levels in Influent to WWTP

Parameter	Inlet Monitoring Station		
	09/07	02/08	04/08
Ortho-Phosphate	1.82	0.96	1.98

Table G2-4: Phosphorus Levels in Effluent from WWTP

Parameter	Outlet Monitoring Station		
	09/07	02/08	04/08
Ortho-Phosphate	1.14	0.69	1.41

The tables show Charleville wastewater treatment plant is treating effluent to a high standard. It is worth noting, the treatment plant is exceeding required effluent standards and is achieving the effluent standard of 2mg/l required for Sensitive Areas under the above legislation.

Assimilative Capacity of the Receiving Water

An assimilative capacity assessment based on a dilution model was carried out, using all available flow and water quality data. The limiting water quality standard for Charleville Stream and the estimated expected concentration of phosphorus in the Stream after the treated effluent is discharged is shown in Table 5 below.

Table G2-5: Expected Water Quality

Parameter	Background Conc. (mg/l) *	Expected Water Quality (mg/l)	Water Quality Limiting Value (mg/l)
Phosphorus	0.11	0.16	0.07

*Background Concentrations were estimated based on concentrations recorded in the river u/s of the WWTP by Cork County Council Wastewater Laboratory during the period Jan '07 to April '08

The assessment of the impact of the phosphorus discharges based on median river flows indicates an expected water quality greater than 0.07mg/l, which is the limit set for Q3 rated river. It should be noted that the predicted nutrient levels are strongly influenced by the background levels in the Charleville Stream. The median phosphorus level in Charleville Stream is taken from EPA records and is greater than the 0.07mg/l target. This is consistent with the Cork County Council records for the upstream monitoring station.

The required level of phosphorus removal is achieved at Charleville wastewater treatment plant. The level of Ortho-Phosphate upstream of the treatment plant is greater than the required level for a Q3 rated river. Therefore the phosphorus levels remain elevated after the discharge from the wastewater treatment plant. The Phosphorus Regulations Implementation Report No.4 identifies the draining of agricultural sites and afforested areas as possible sources of the elevated phosphorus levels upstream of the treatment plant.

Discharges in proximity of Wastewater Works

Kerry Ingredients (Golden Vale) Co-op is discharging approximately 1.5km downstream of the Charleville wastewater treatment plant. Discharge from the Kerry Ingredients wastewater treatment plant is downstream of the Cork County Council and EPA monitoring points detailed above. These discharges will also ensure the phosphorus levels in the stream remain elevated.

The EPA monitoring stations at New Line Bridge in Charleville town (u/s of plant), and at the bridge North West of Ballincolly (d/s of plant) have been identified as sites with difficulties achieving the 2007 targets set by the Phosphorus regulation 1998. The Phosphorus Regulations Implementation Report No.4 suggests that the poor quality at this site is influenced by agricultural activities further upstream and prioritises Charleville Stream for farm surveys.

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.

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.

The Water Services Investment Programme 2007-2009 does not allocate any funding for improvements to the Kanturk Wastewater Treatment Plant, which was originally commissioned in 1994.

The most recent upgrades that were made to the plant were in 2006. A 6mm step screen and wash press was put in place at the plant as preliminary treatment.

The required level of nutrient removal under the Urban Wastewater Directive (S.I. 254 of 2001) is achieved at Charleville wastewater treatment plant. The Phosphorus Regulations Implementation Report No.4 states that, the Charleville wastewater treatment plant is operating.

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.

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.

There are no overflows other than those from the primary and secondary overflows.

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 : 
(on behalf of the organisation)

Date : 19th September 2008

Print signature name: THOMAS G. STRITCH

Position in organisation: DIRECTOR OF SERVICES

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SECTION I: JOINT DECLARATION

Joint Declaration Note1

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

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

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

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

Lead Authority

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

Print signature name: _____

Position in organisation: _____

Co-Applicants

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

Print signature name: _____

Position in organisation: _____

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

Print signature name: _____

Position in organisation: _____

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