Comhairle Contae Chorcaí
Cork County Council

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

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

Our Ref.: MS/BALL/0609

15th June 2009

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

Dear Sir/Madam,

Please find enclosed the waste water discharge license application for the agglomeration of Ballingeary ,

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

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

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

Yours faithfully,
Patricia Power
Director of Services

CORK COUNTY COUNCIL
(Southern Division)

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

under the Wastewater Discharge Authorisation Regulations S.I. 684 of 2007

Location : The agglomeration of Ballingeary , County Cork

Category of application : 500 to 1000 PE

Date Application Lodged : 22nd June 2009

Waste Water Discharge Licence Application Form

EPA Ref. Nº: *(Office use only)*	

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

Tracking Amendments to Draft Application Form

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

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

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

CONTENTS

ABOUT THIS APPLICATION FORM

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

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

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

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

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

PROCEDURES

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

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

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

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

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

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

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

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

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

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

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

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

SECTION A: NON-TECHNICAL SUMMARY

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

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

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

A description of:

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

Supporting information should form **Attachment Nº A.1**

Non-Technical Summary

Ballingeary is situated approximately twenty-three kilometres south west of Macroom, and approximately eight kilometres west of Inchigeelagh. The village functions as a local service centre and has a seasonal tourism trade, which is based largely on its location on the Macroom – Bantry road and is within close proximity to the National Forest Park at Gougane Barra.

Ballingeary is designated as a key village and is an important local service and commercial centre. The village itself also has a strong industrial base and is an important settlement as an employment provider for the wider area. Udaras na Gaeltachtha, which promotes employment opportunities within the area has a number of industrial premises within the village most of which are located to the southwest of the village centre. The village also provides seasonal summer school facilities for students and this is a significant contributing factor which needs to be considered for the design of a new waste water treatment facility.

The Waste Water Works and the Activities Carried Out Therein

The wastewater needs of the village are currently served by a septic tank system located to the south of the village. The septic tank was built in 1930 to serve 10

houses. It currently serves 61 houses, 13 business premises, 2 schools, 1 Summer College, 1 community hall, public toilets and a GAA club. Effluent flows by gravity to the septic tank for treatment before discharge to the Bunsheelin River.

When the river floods the tank is completely covered. This can cause a back flow in the pipe network and the overflow of raw sewage on to the street. Raw sewage flows into a man made ditch via a storm water overflow as a result of the inadequate capacity of the tank. Cork County Council has identified that the existing system is no longer satisfactory and proposes to install an improved wastewater treatment plant (WWTP).

There are proposals to upgrade the Ballingeary Waste Water Treatment System to a 1,300 PE plant, this upgrade will include:

- Inlet Works
- Storm water Holding Tank
- Sludge Thickening and Storage facilities
- 2 No. Aeration Tanks c/w diffused aeration
- 2 No. Final Settlement Tanks with sludge return and waste facilities
- Phosphorus Dosing Facility

The Sources of Emissions from the Waste Water Works

The population load for the Ballingeary agglomeration arises from the following areas:

- Domestic population
- Commercial premises
- Industrial premises
- Schools
- Infiltration

Other potential emissions from the waste water treatment plant include odour generated from the treatment process.

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 emissions on the environment

The final effluent is discharged to the Bunsheelin River, approximately 100m up-stream of the Bunsheelin – Lee confluence. Currently, the waste water treatment facility is receiving effluent from a PE of 650 at peak season. For a PE of 650 there is a potential Dry Weather Flow (DWF) of approximately 150m^3 entering the plant each day. The PE of Ballingeary increases by approximately 25% from winter to summer. In the winter there would be a DWF of approximately 120m^3 entering the plant each day.

There are proposals to upgrade the waste water treatment facility to a 1,300PE plant. The final effluent discharge point for the proposed upgrade would be to the River Lee. This upgrade would greatly reduce the effects of the emissions on the receiving environment.

At present there is a storm water overflow from the septic tank which conveys any excess hydraulic load entering the septic tank to a man made ditch. All other discharges are conveyed to the river via the primary discharge point.

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

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

The new plant will include the following elements:

- Inlet Screening
- 2 No Aeration Tanks
- 2 No Final Settlement tanks
- Sludge thickening and storage facilities
- Phosphorus dosing facilities

Techniques
The new WWTP shall be operated and maintained in accordance with the best practice shall comply with the standards set down in the proposed design.

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 upgrading of the plant will ensure that the basic obligations of the operator are being adhered to.

Measures planned to monitor emissions into the environment

The Cork County Council Environmental Laboratory carries out sampling of the influent and effluent. The Cork County Council Environmental Department located in Inniscarra takes samples from the Bunsheelin River upstream and downstream of the wastewater treatment plant discharge point.

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Ballingeary

Applicant's Details

Name and Address for Correspondence

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

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

Name*:	Cork County Council
Address:	County Hall
	Carrigrohane Road
	Cork
Tel:	021 4276891
Fax:	021 4276321
e-mail:	

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

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

Name*:	Patricia Power
Address:	Directors of Services: Operational Water Services
	Floor 5 (Tower)
	County Hall
	Cork
Tel:	021 4285285
Fax:	021 4276321
e-mail:	Patricia.power@corkcoco.ie

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

Co-Applicant's Details

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

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

Design, Build & Operate Contractor Details

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

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

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

Attachment included	Yes	No
	✓	

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

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

Name*:	Faughna Keohane
Address:	Dromanallig
	Ballingeary
	Co. Cork
Grid ref (6E, 6N)	115181E, 066906N
Level of Treatment	Primary
Primary Telephone:	026 41047
Fax:	026 42390
e-mail:	Faughna.keohane@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	Open end pipe to river
Unique Point Code	SWO1BLNGY
Location	Bunsheelin River
Grid ref (6E, 6N)	115239E, 066876N

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

Attachment included	**Yes**	**No**
	✓	

B.4 Location of Secondary Discharge Point(s)

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

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

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

Attachment included	**Yes**	**No**
		✓

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

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

Type of Discharge	Storm water overflow
Unique Point Code	SWO2BLNGY
Location	Man made ditch
Grid ref (6E, 6N)	115145E, 066920N

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:	0214867007
e-mail:	Planninginfo@corkcoco.ie

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

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

Local Authority Planning File Reference Nº:	Not available

Attachment B.6 should contain ***the most recent*** planning permission, including a copy of ***all*** conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS, should also be enclosed. Where planning permission is not required for the development, provide reasons, relevant correspondence, *etc.*

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

		✓

B.7 Other Authorities

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

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

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

Within the SFADCo Area	**Yes**	**No**
		✓

B.7 (ii) Health Services Executive Region

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

Name:	Health Services Executive Southern Region
Address:	North Lee Local Health Office
	Floor 2, Abbeycourt House
	George's Quay
Tel:	021 4965511
Fax:	
e-mail:	info@hse.ie

B.7 (iii) Other Relevant Water Services Authorities

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

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

Relevant Authority Notified	**Yes**	**No**
		✓

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

Attachment included	Yes	No
		✓

B.8 Notices and Advertisements

Regulations 10 and 11 of the Waste Water Discharge (Authorisation) Regulations, 2007 require all applicants to advertise the application in a newspaper (within two weeks prior to date of application) 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 one (1) copy 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	**715**
Data Compiled (Year)	**2009**
Method	**Geodirectory Assessment**

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.

A PE of 650 was obtained by a geodirectory assessment. An additional 10% has been added to this figure in order to account for future development. This allows for a potential increase in the PE of up to 715 during the course of the licence.

B.9 (iii) FEES

State the relevant Class of waste water discharge as per Column 1 of the Second Schedule, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of

the Waste Water Discharges (Authorisation) Regulations 2007, S.I. No. 684 of 2007.

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

Appropriate Fee Included	Yes	No
	✓	

B.10 Capital Investment Programme

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

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

Attachment included	Yes	No
	✓	

B.11 Significant Correspondence

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

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

Attachment included	Yes	No
		✓

B.12 Foreshore Act Licences.

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

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

Attachment included	Yes	No
		✓

SECTION C: INFRASTRUCTURE & OPERATION

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

C.1 Operational Information Requirements

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

C.1.1 Storm Water Overflows

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

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

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.

Section C: Infrastructure & Operation

Ballingeary is the second largest settlement in the Muskerry Gaeltacht area. It is situated approximately twenty-three kilometres south west of Macroom, and approximately eight kilometres west of Inchigeelagh. The village functions as a local service centre and has a seasonal tourism trade, which is based largely on its location on the Macroom – Bantry road and is within close proximity to the National Forest Park at Gougane Barra. Ballingeary village is situated on the floor of the lee valley, at

an elevation of approximately 95m above sea level. The topography of the area surrounding Ballingeary is mountainous and the village itself is situated in a relatively narrow strip of lowland, which is surrounded by hills to the north, south and west.

Bunsheelin River is a tributary of the Lee, which flows, in a southerly direction through Ballingeary village before joining the River Lee 500m upstream of Lough Allua and approximately 250m downstream of the proposed discharge point. It is a typical moorland stream, which rises in the mountains north of Ballingeary and passes through a narrow valley of poor quality agricultural land prior to its confluence with the Lee.

The wastewater needs of the village are currently served by a septic tank system located to the south of the village. The septic tank was built in 1930 to serve 10 houses. It currently serves 61 houses, 13 business premises, 2 schools, 1 Summer College, 1 community hall, public toilets and a GAA club. When the river floods the tank is completely covered. This can cause a back flow in the pipe network and the overflow of raw sewage on to the street. Raw sewage flows into a man made ditch via a storm water overflow as a result of the inadequate capacity of the tank. Cork County Council has identified that the existing system is no longer satisfactory and proposes to install an improved wastewater treatment plant (WWTP).

The passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant. Generally the septic tank removes 50% of the particulate BOD and none of the soluble BOD. Typically BOD in urban wastewater is 50% particulate and 50% soluble, hence the septic tank removes 25% of the BOD from the wastewater. Effluent from the septic tank discharges directly to the Bunsheelin River. No secondary treatment is provided to the effluent prior to discharge.

C 1.1. Storm Water Overflows

There is a storm water overflow provided in the Ballingeary Waste Water Treatment System which discharges waste water to a man-made ditch.

C 1.2. Pumping Stations

There is no pumping station in the Ballingeary sewerage network, all sewage flows by gravity to the septic tank.

Primary Discharge Point
The primary discharge from the septic tank conveys treated effluent to the Bunsheelin River via a 150mm open end clay pipe to the outfall.

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.

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 – Provided in E4	**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
SW01B LNGY	Primary Discharge	Cork County Council	River	Bunsheelin River	None	115238	066876
SW02B LNGY	Storm Water Overflow	Cork County Council	River	Bunsheelin River	None	115145	066920

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

SECTION E: MONITORING

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

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

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

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

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

E.2. Monitoring and Sampling Points

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

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

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

E.2 Monitoring in respect of Ballingeary Waste Water Licence Application

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

General Laboratory Information

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

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

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

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

Attachment included	**Yes**	**No**
	✓	

E.3. Tabular data on Monitoring and Sampling Points

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

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW01	Primary Discharge	S	115185 E	066905 N	N
aSW01u	Primary Discharge	S	115134 E	067195 N	N
aSW01d	Primary Discharge	S	115237 E	066812 N	N

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

E.4 Sampling Data

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

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

Attachment E.4 should contain any supporting information.

Attachment included	Yes	No
	✓	

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

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

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

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

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

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

- Details of all monitoring of the receiving water should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables F.1(i)(a) & (b) should be completed for the primary discharge point. Surface water monitoring locations upstream and downstream of the discharge point shall be screened for those substances listed in Tables F.1(i)(a) & (b). Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.

- For discharges from secondary discharge points Tables F.1(ii)(a) & (b) should be completed. Furthermore, provide summary details and an assessment of the impacts of any existing or proposed emissions on the surface water or ground (aquifers, soils, sub-soils and rock environment), including any impact on environmental media other than those into which the emissions are to be made.

- Provide details of the extent and type of ground emissions at the works. For larger discharges to groundwaters, e.g., from Integrated Constructed Wetlands, large scale percolation areas, etc., a comprehensive report must be completed which should include, inter alia, topography, meteorological data, water quality, geology, hydrology, and hydrogeology. The latter must in particular present the aquifer classification and vulnerability. The Geological Survey of Ireland Groundwater Protection Scheme Dept of the Environment and Local Government, Geological Survey of Ireland, EPA (1999) methodology should be used for any such classification. This report should also identify all surface water bodies and water wells that may be at risk as a result of the ground discharge.

- Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative

standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.

- Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.

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

- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –

  (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) —

    (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,

    (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or

    (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,

  (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC[1] in accordance with the procedures laid down in Article 21 of that Directive,

  (c) a special area of conservation within the meaning of the Natural Habitats Regulations, or

  (d) an area classified pursuant to Article 4(1) or 4(2) of Council Directive 79/409/EEC[2];

  [1]Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (OJ No. L 206, 22.07.1992)

  [2]Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds (OJ No. L 103, 25.4.1979)

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

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

Existing Receiving Water

The receiving water Body of Ballingeary Waste Water Treatment System is the Bunsheelin River. Effluent from the treatment system is discharged via the primary discharge point into the Bunsheelin River at the Bunsheelin – Lee confluence.

The River Lee (19L03) rises approximately 6km west of Ballingeary village, in the mountainous terrain at Gougane Barra Lake. The River flows in an easterly direction through Ballingeary village, feeding Lough Allua approximately 1Km south east of the site of the proposed WWTP, before eventually discharging to Cork Harbour. The River Lee at Ballingeary is a fast – flowing river, which drains a large upland area including Gougane Barra Lake.

Bunsheelin River is a tributary of the Lee, which flows, in a southerly direction through Ballingeary village before joining the main river 0.5km upstream of Lough Allua and approximately 250m downstream of the proposed discharge point. It is a typical moorland stream, which rises in the mountains north of Ballingeary and passes through a narrow valley of poor quality agricultural land prior to its confluence with the Lee.

The 1998 Phosphorus Regulations set targets for phosphorus levels and biological quality (Q-values) for rivers and lakes. Where water quality is satisfactory it must be maintained and where water quality is unsatisfactory it must be improved. For levels of phosphorus the baseline Q-value determines the median molybdate-reactive phosphorus (MRP) to be achieved.

Water quality in the River Lee is monitored by the EPA in a number of different stations. EPA station 0100 Inchinossig Br, is located approximately 750m up-stream of Ballingeary Waste Water Treatment System discharge point. Water quality in this station had a Q4-5 value from 1986 to 2002. The Q-value dropped in 2005 to Q4 and has maintained that value in 2008.

EPA station 0200 at the footbridge down-stream of Inchigeelagh, is located approximately 9km downstream of the Ballingeary Waste Water Treatment System discharge point. Water quality in this station has had a constant value of Q4 since 1999.

Biological Quality Ratings (Q Values)											
Station	**1971**	**1976**	**1981**	**1986**	**1990**	**1994**	**1997**	**1999**	**2002**	**2005**	**2008**
0100	5	5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4	4
0200	5	5	5	4-5	4-5	4	4-5	4	4	4	4

A biological Quality Rating of Q4 represents satisfactory water quality. Eutrophication is unlikely to occur in water bodies with a biological quality rating of Q4 or higher.

Habitats Directive 92/43/EEC

Lough Allua, which is a proposed Natural heritage Area, is relatively rich in nutrients although acidic at times and supports a sparse marginal flora. In the eastern part of the lake there are rocky outcrops, which support a variety of species including pale dog violet, which is protected under the Flora Protection Order 1999. The lakeshore supports snipe, sedge warbler, lapwing and heron while great crested grebe, mallard and moorhen also nest. Small numbers of wintering mallard, tufted duck and teal also occur. Small populations of freshwater pearl mussel have been noted. Overall the area is considered important because of its diversity of habitats. A site synopses for the designation is included in **Attachment F**.

The Gearagh SAC is situated approximately 12km downstream of Ballingeary and 1.5km south of Macroom. It extends for approximately 7km of the river and consists of a wide flat valley of the River Lee. This area represents the only extensive alluvial woodland in Europe west of the Rhine and qualifies as a priority habitat under the European Habitats Directive. The uniqueness of this site is such that it has been designated as a statutory nature reserve and is internationally recognised via its designation as a Ramsar site and as a Biogenetic Reserve. A site synopses for the designation is included in **Attachment F**.

Brown trout are found throughout the Lee system including Gougane Barra Lake and Lough Allua. Tributaries of the Lee, including the Bunsheelin River, support trout and are also used as spawning grounds.

Drinking Water Directive 801/68/EEC

The water supply for Ballingeary is abstracted from the Bunsheelin River up-stream of Ballingeary WWTP primary discharge point. This water is a groundwater supply and supplies approximately 130m^3 of water per day. The water supply for Cork City is abstracted from the Lee at Inniscarra and further downstream at the Lee Road treatment plant. There is a considerable distance between the Waste Water Treatment System at Ballingeary and the closest abstraction point at Inniscarra. The most significant parameters, which may affect water quality are BOD, suspended solids, nitrates, ammonium, phosphates, total coliforms, faecal coliforms, faecal streptococci and salmonella. Given the distance between the proposed WWTP and the abstraction point at Inniscarra (40km approximately) it is extremely unlikely that the discharge will have any significant impact on water quality used for public water supply. It should be noted that the proposed WWTP would improve the quality of the discharge.

Freshwater Fish Directive 2006/44/EC & Salmonid Regulations S.I. No. 293/1988

The Lee River has been designated as a salmonid river under the European communities Regulation, 1988 and it is advisable that the potential impact of the proposed upgrade be assessed. Under these regulations monthly monitoring of the river by the EPA for a range of specified parameters is required and limits are specified for these parameters. The regulations carry some weight due to their strict limits and the consequent suitability of a watercourse for other uses should it meet these limits.

Water Framework Directive 2000/60/EC

The objectives of the Water Framework Directive (WFD) are to protect all high status waters, prevent further deterioration of all waters and to restore degraded surface and ground water status by 2015. Cork County Council monitors the inlet and outlet flows from Ballingeary septic tank to assess compliance with the relevant standards. Up-stream and down-stream locations are also monitored. A copy of the Water Quality Management Plan for this area has been included in **Attachment F**.

Urban Waste Water Treatment Directive 91/271/EEC

The Urban Waste Water Treatment Regulations, (S.I. 254 of 2001) gives effect to provisions of the Urban Waste Water Treatment Directive (91/271/EEC). The 2001 Irish Regulations cover various requirements in relation to the collection and treatment of urban waste water. The Regulations specify that wastewater arising from populations of less than 2000 shall, by the end of 2005, be subject to appropriate treatment prior to discharge. Appropriate treatment is described as that which will allow compliance with other relevant Directives. The most pertinent of these is the freshwater Fish Directive and Quality of Salmonid Waters Regulations. The Urban Wastewater Directive specifies that the point of discharge of the treated wastewater shall be chosen so as to minimise the effects on receiving waters.

The Directive specifies a number of obligations regarding the design of wastewater treatment plants as follows:

(a) Such plants shall be designed, constructed, operated and maintained to ensure sufficient performance under all normal local climatic conditions.

(b) When designing the plants, seasonal variations of the load shall be taken into account.

(c) Waste water treatment plants shall be designed or modified so that representative samples of the incoming waste water and of treated effluent can be obtained before discharge to receiving waters.

(d) The point of discharge of urban wastewater shall be chosen, as far as possible, so as to minimise the effects on receiving waters.

Nitrates Directive 91/676/EEC

Council Directive 91/676/EEC concerning the protection of waters against pollution caused by nitrates from agricultural sources obliges member states to identify Nitrate Vulnerable Zones within which restricted agricultural practices will apply. With respect to surface waters, the Directive notes that sensitive waters shall be identified where nitrate levels exceed the maximum concentration specified in the Surface Water Directive. The whole country is designated as a nitrate vulnerable zone; therefore the nitrate directive is applicable.

Birds Directive 79/409/EEC

The directive aims to conserve and manage populations of wild birds throughout Europe partly through the designation of Special Protection Areas (SPA) for birds and their habitats. The discharge point is not located within an SPA.

Groundwater Directives 80/68/EEC and 2006/118/EC
Not applicable as there are no emissions to groundwater.

Bathing Water Directive 76/160/EEC
There are no designated bathing waters in the vicinity of the discharge.

F.1 (I) Waste Assimilative Capacity of Receiving Waters

Assimilative Capacity

Receiving waters should have a capacity to assimilate effluent discharges without showing signs of pollution. It is desirable that any effluent discharge to the Bunsheelin River should not

- increase the BOD_5 level in the water by more than 1mg/l;
- increase the overall BOD_5 in the water to more than 4mg/l (ideally 3mg/l);
- increase the Ortho Phosphate level in the water to more than 0.03mg/l;

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- increase the overall BOD_5 in the water to more than 4mg/l (ideally 3mg/l);
- increase the Ortho Phosphate level in the water to more than 0.03mg/l;

Assimilative Capacity of the Receiving Water

Mass Balance Equation for Orthophosphates:

Median flow of River (SWRBD Estimated) = 0.371096m^3/sec
Median oPO_4-P in River (upstream) = 0.05mg/l

Average volume of discharge = 0.002 m^3/sec
Median value for oPO_4-P in discharge = 10mg/l

$$C_{final} = \frac{(0.371096 \times 0.05) + (0.002 \times 10)}{(0.371096 + 0.002)}$$

C_{final} = 0.103 mg/l oPO_4-P

The increase in Orthophosphate due to the discharge of Ballingeary Septic tank is 0.053 mg/l.

Mass Balance Equation for BOD:

Flow of River (95%ile) = 0.02m^3/sec
Median BOD in River (upstream) = 1.0mg/l

Average volume of discharge = 0.002 m^3/sec
Median value for BOD in discharge = 320mg/l

$$C_{final} = \frac{(0.02 \times 1.0) + (0.002 \times 320)}{(0.02 + 0.002)}$$

C_{final} = 30mg/l BOD

The increase in BOD due to the discharge of Ballingeary Septic tank is 29mg/l.

Mass Balance Equation for Suspended Solids:

Flow of River (95%ile) = 0.02m^3/sec
Median SS in River (upstream) = 2.5 mg/l

Average volume of discharge = 0.002 m^3/sec
Median value for SS in discharge = 250mg/l

$$C_{final} = \frac{(0.02 \times 2.5) + (0.002 \times 250)}{(0.02 + 0.002)}$$

C_{final} = 25.0mg/l Suspended Solids

The increase in Suspended Solids due to the discharge of Ballingeary Septic tank is 22.5mg/l.

Mass Balance Equation for Total Phosphates:

Median Flow of River (SWRBD) = 0.371096m^3/sec
Median TPO_4-P in River (upstream) = 0.05mg/l

Average volume of discharge = 0.002m^3/sec
Median value for TPO_4-P in discharge = 12 mg/l

$$C_{final} = \frac{(0.371096 \times 0.05) + (0.002 \times 12)}{(0.371096 + 0.002)}$$

C_{final} = 0.114 mg/l Total Phosphates

The increase in Total Phosphates due to the discharge of Ballingeary Septic tank is 0.064g/l.

Mass Balance Equation for Total Nitrogen:

Flow of River (95%ile) = 0.02 m^3/sec
Median Total Nitrogen in River (upstream) = 0.85mg/l

Average volume of discharge = 0.002 m^3/sec
Median value for Total Nitrogen in discharge = 89.2mg/l

$$C_{final} = \frac{(0.02 \times 0.85) + (0.002 \times 89.2)}{(0.02 + 0.002)}$$

C_{final} = 8.88mg/l Total Nitrogen

The increase in Total Nitrogen due to the discharge of Ballingeary Septic tank is 8.03mg/l.

Mass Balance Equation for Sulphates:

Flow of River (95%ile) = 0.02m^3/sec
Median Sulphates in River (upstream) = 30.0mg/l

Average volume of discharge = 0.002 m^3/sec
Median value for Sulphates in discharge = 32.7 mg/l

$$C_{final} = \frac{(0.02 \times 30.0) + (0.002 \times 32.7)}{(0.02 + 0.002)}$$

C_{final} = 30.24mg/l Sulphates

The increase in Sulphates due to the discharge of Ballingeary Septic tank 0.24mg/l.

Mass Balance Equation for Ammonia - N:

Flow of River (95%ile) = 0.02m^3/sec
Median Ammonia in River (upstream) = 0.1mg/l

Average volume of discharge = 0.002 m^3/sec
Median value for Ammonia in discharge = 75 mg/l

$$C_{final} = \frac{(0.02 \times 0.1) + (0.002 \times 75)}{(0.02 + 0.002)}$$

C_{final} = 6.91mg/l Total Ammonia

The increase in Ammonia due to the discharge of Ballingeary Septic tank is 6.81mg/l.

Proposed Assimilative Capacity of the Receiving Water

Mass Balance Equation for BOD:

Flow of River (95%ile) = 0.069052m^3/sec
Median BOD in River (upstream) = 1.0mg/l

Average volume of discharge = 0.003 m^3/sec
Median value for BOD in discharge = 20mg/l

$$C_{final} = \frac{(0.069052 \times 1.0) + (0.003 \times 20)}{(0.069052 + 0.003)}$$

C_{final} = 1.79 mg/l BOD

The increase in BOD due to the discharge of the proposed upgrade is 0.79 mg/l.

Mass Balance Equation for Suspended Solids:

Flow of River (95% ile) = 0.069052m^3/sec
Median SS in River (upstream) = 9.0mg/l

Average volume of discharge = 0.003 m^3/sec
Median value for SS in discharge = 35mg/l

C_{final} = (0.069052 x 9.0) + (0.003 x 35)

$$\frac{}{(0.069052 + 0.003)}$$

C_{final} = 10.08mg/l Suspended Solids

The increase in Suspended Solids due to the discharge of the proposed upgrade is 1.08 mg/l

Mass Balance Equation for Ammonia - N:

Flow of River (95%ile) = 0.069052m^3/sec
Median Ammonia in River (upstream) = 0.1mg/l

Average volume of discharge = 0.003 m^3/sec
Median value for Ammonia in discharge = 10mg/l

C_{final} = (0.069052 x 0.1) + (0.003 x 10)

$$\frac{}{(0.02 + 0.003)}$$

C_{final} = 4.31mg/l Total Ammonia

The increase in Ammonia due to the discharge of the proposed upgrade is 4.21mg/l.

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

Attachment included	Yes	No
		✓

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

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

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

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

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

Attachment F.2 should contain any supporting information.

SECTION G: PROGRAMMES OF IMPROVEMENTS

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

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).

Ballingeary Waste Water Treatment System discharges to the Bunsheelin River just upstream of the Bunsheelin – Lee confluence. The Bunsheelin River is small and does not have the assimilative capacity to take effluent.

Cork County Council proposes to upgrade the Ballingeary Waste Water Treatment System under a project called the Western Bundle. This project consists of a number of similar sized sewerage scheme projects in the western part of the South Cork Sanitary Authority functional area. The Council has proposed a strategy of combining these projects into a single project for procurement with a view to creating a viable project size in PPP terms. Details of compliance are outlined in **Section F1**

Funding has not yet been secured for this upgrade under the Water Services Investment Programme 2007-2009. Cork County Council WSIP section has applied to the DEHLG for funding under the Serviced Land Initiative.

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

Attachment included	Yes	No

		✓

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

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

There are no EPA monitoring sites on the Bunsheelin River into which Ballingeary WWTP discharges, therefore the Q value upstream and downstream of the WWTP outfall in the Bunsheelin River is unknown.

Water quality in the River Lee is monitored by the EPA in a number of different stations. EPA station 0100 Inchinossig Br, is located approximately 650m up-stream of Bunsheelin – Lee Confluence. Water quality in this station had a Q4-5 value from 1986 to 2002. The Q-value dropped in 2005 to Q4 and has maintained that value in 2008.

EPA station 0200 footbridge down-stream of Inchigeelagh, is located approximately 9km downstream of the Bunsheelin – Lee Confluence. Water quality in this station has had a constant value of Q4 since 1999.

Biological Quality Ratings (Q Values)											
Station	**1971**	**1976**	**1981**	**1986**	**1990**	**1994**	**1997**	**1999**	**2002**	**2005**	**2008**
0100	5	5	4-5	4-5	4-5	4-5	4-5	4-5	4-5	4	4
0200	5	5	5	4-5	4-5	4	4-5	4	4	4	4

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

Attachment included	**Yes**	**No**
		✓

G.3 Impact Mitigation

Provide details on a programme of improvements to ensure that discharges from the agglomeration will not result in significant environmental pollution.

There are proposals to upgrade the Ballingeary Waste Water Treatment System to a 1,300 PE plant, this upgrade will include:

- Inlet Works
- Storm water Holding Tank
- Sludge Thickening and Storage facilities

- 2 No. Aeration Tanks c/w diffused aeration
- 2 No. Final Settlement Tanks with sludge return and waste facilities
- Phosphorus Dosing Facility

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

Attachment included	Yes	No
		✓

G.4 Storm Water Overflow

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

There is a storm water overflow which conveys any excess hydraulic load entering the septic tank to a man made ditch via a 150mm clay pipe.

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

Attachment included	Yes	No
		✓

SECTION H: DECLARATION

Declaration

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

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

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

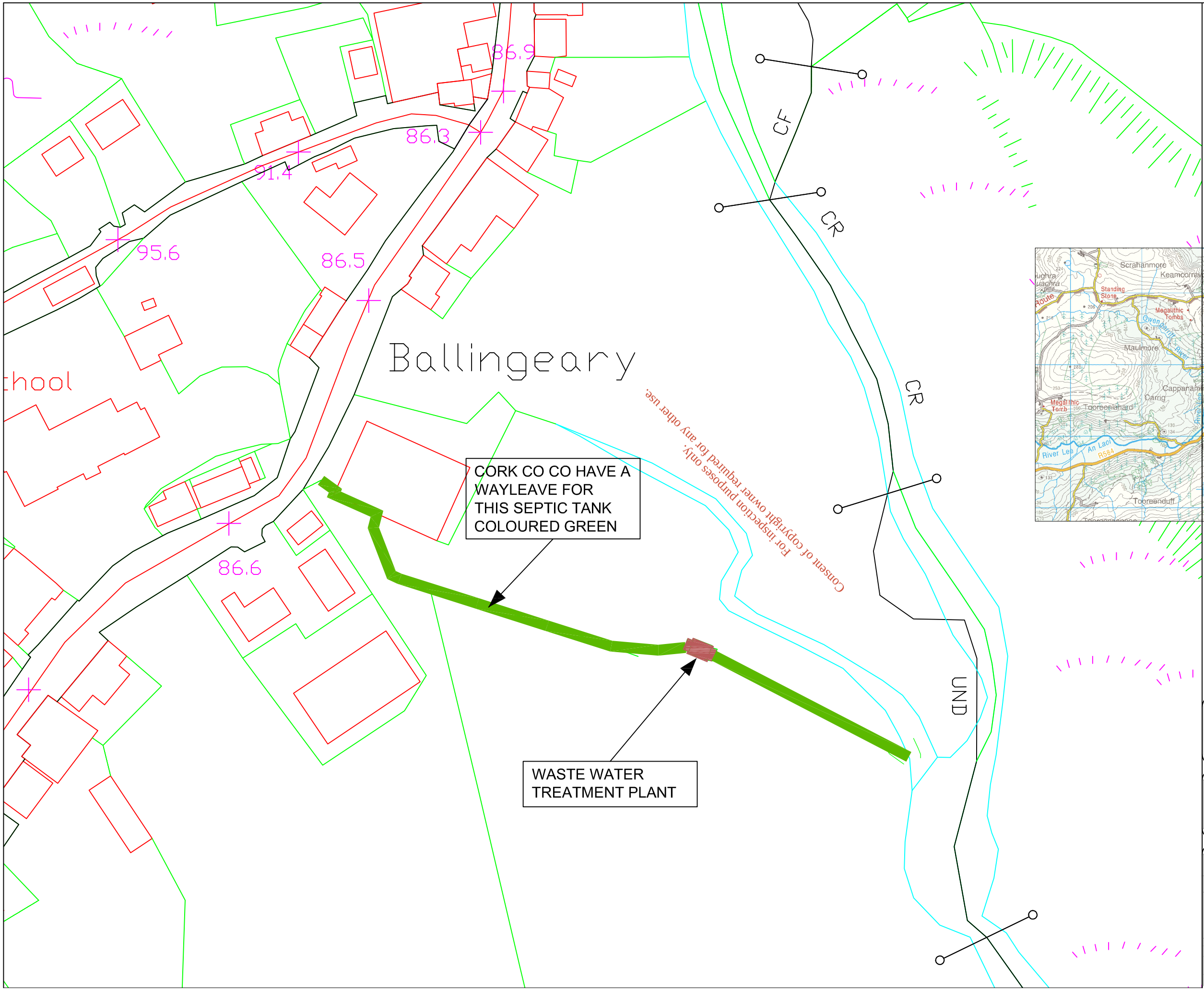
This consent relates to this application itself and to any further information or submission, whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

Signed by : _____ **Date :** 17th June 09
(on behalf of the organisation)

Print signature name: P. Buswell

Position in organisation: D.O.S.

ATTACHMENTS TABLE OF CONTENTS		
ATTACHMENTS	ITEM	TITLE
A.1	Map 1	Site Location of WWTP
A.1	Map 2	Location of WWTP
B.1	Map 3	Agglomeration Boundary
B.2	Map 4	Location of WWTP
B.2	Map 5	Monitoring Points
B.3	Map 6	Primary Discharge Location
B.3	Map 7	Monitoring Points
B.5	Map 8	Storm Water Overflow Location
B.5	Map 9	Monitoring Points
B.8	Text	Newspaper Site Notice & Site Notice
B.8	Map 10	Site Notice Location
B.10	Text	Proposed upgrade
B.10	Text	Capital Investment Programme
C.1	Map 11	Operation Information
E.2	Text	Accreditation
E.2	Map 12	Monitoring Points
E.4	Table	Monitoring Results
F.1	Text	Site synopses
F.1	Text	Water Quality Management Plan
Online Data	Table	Online Data



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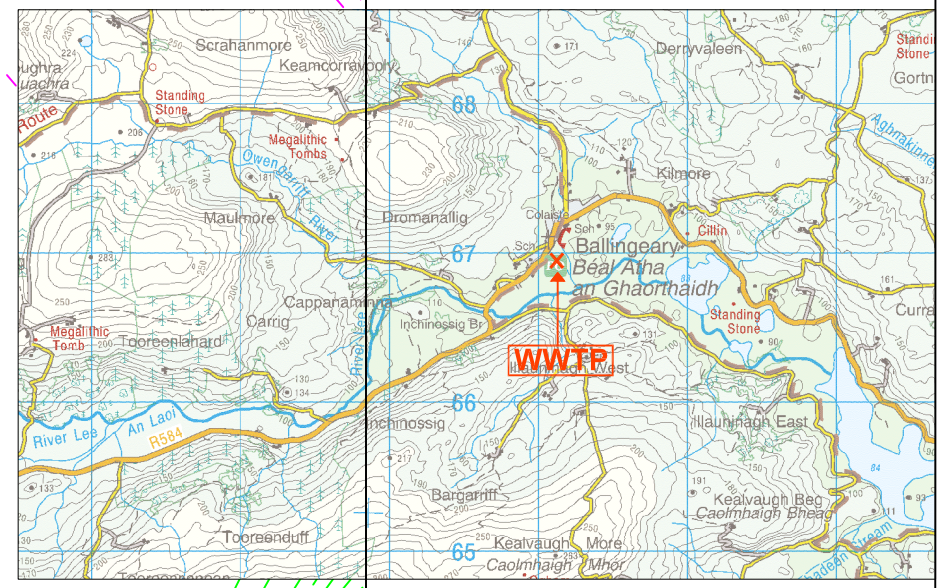

Key Map
Not to Scale

N

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CORK COUNTY COUNCIL
SOUTHERN DIVISION

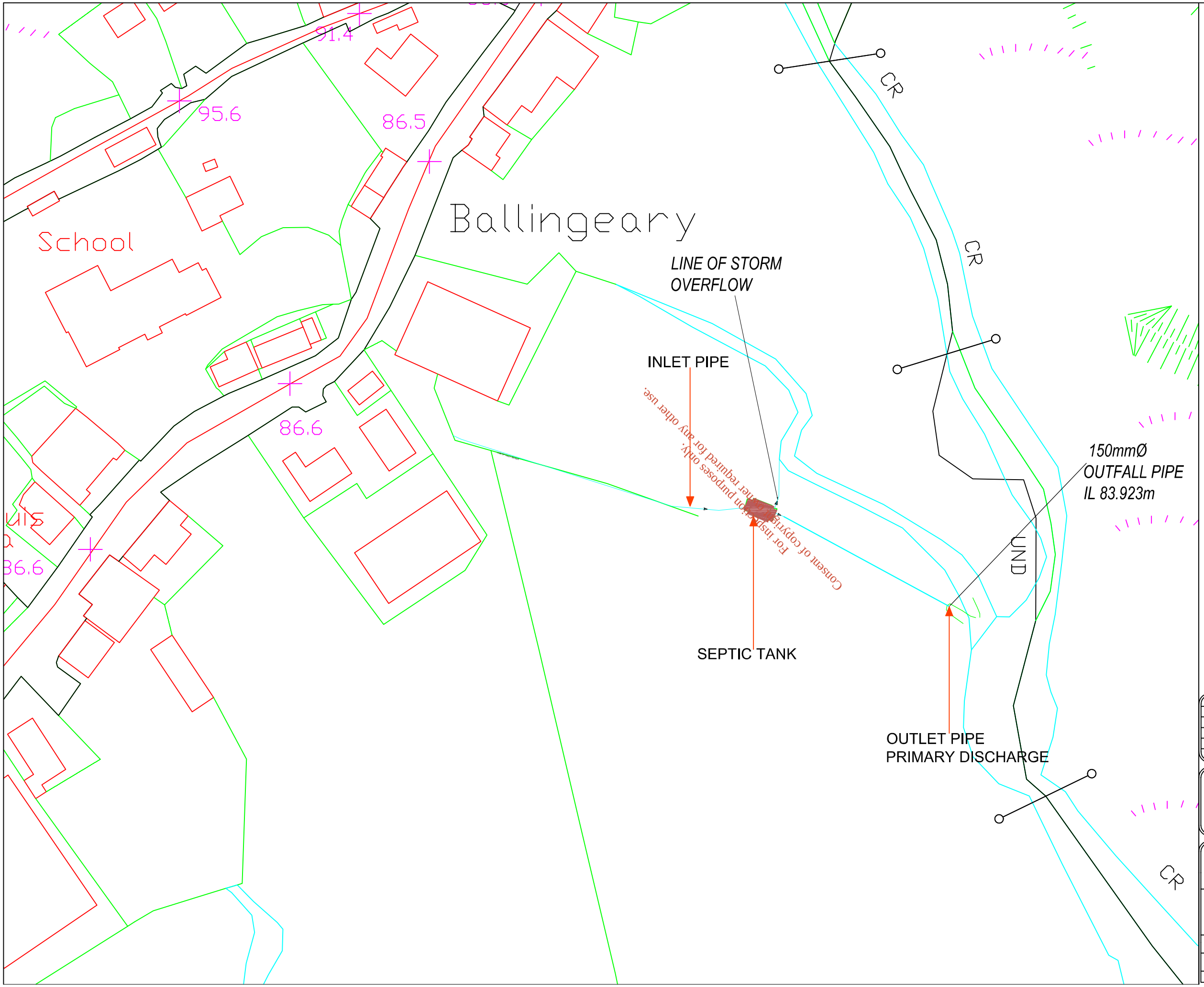
Noel O Keeffe, B.E. C.Eng. Eur.Ing F.I.E.I.MICE
County Engineer
County Hall, Cork.

Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment A1_Map1
Location of WWTP

Designed: ER	Checked: MH	Scales: 1:1000 @ A3	Drawing No: A1_Map1
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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CORK COUNTY COUNCIL
SOUTHERN DIVISION

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Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment A1_Map2
Location of WWTP

Designed:	Checked:	Scales:	Drawing No:
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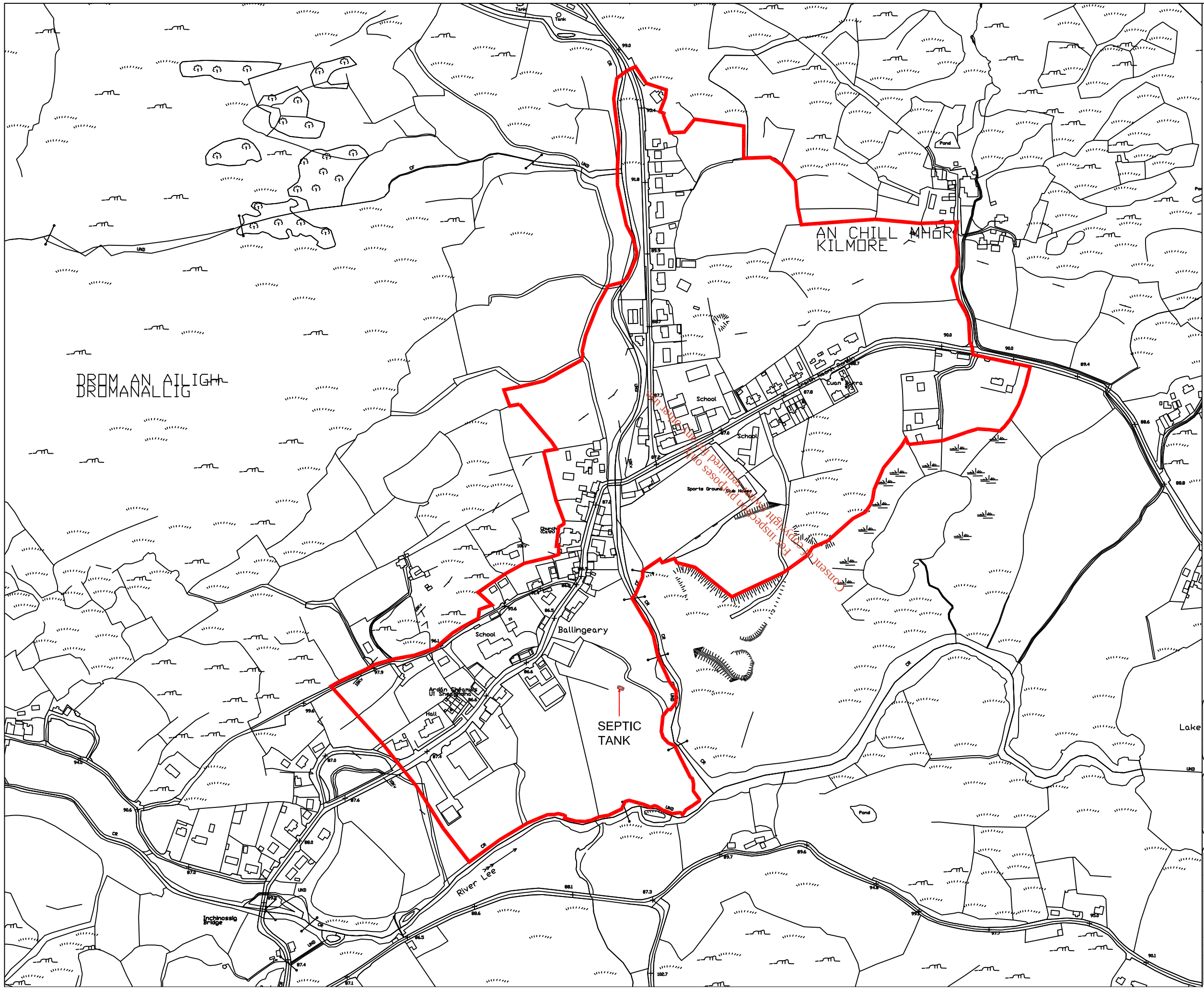
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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AGGLOMERATION BOUNDARY

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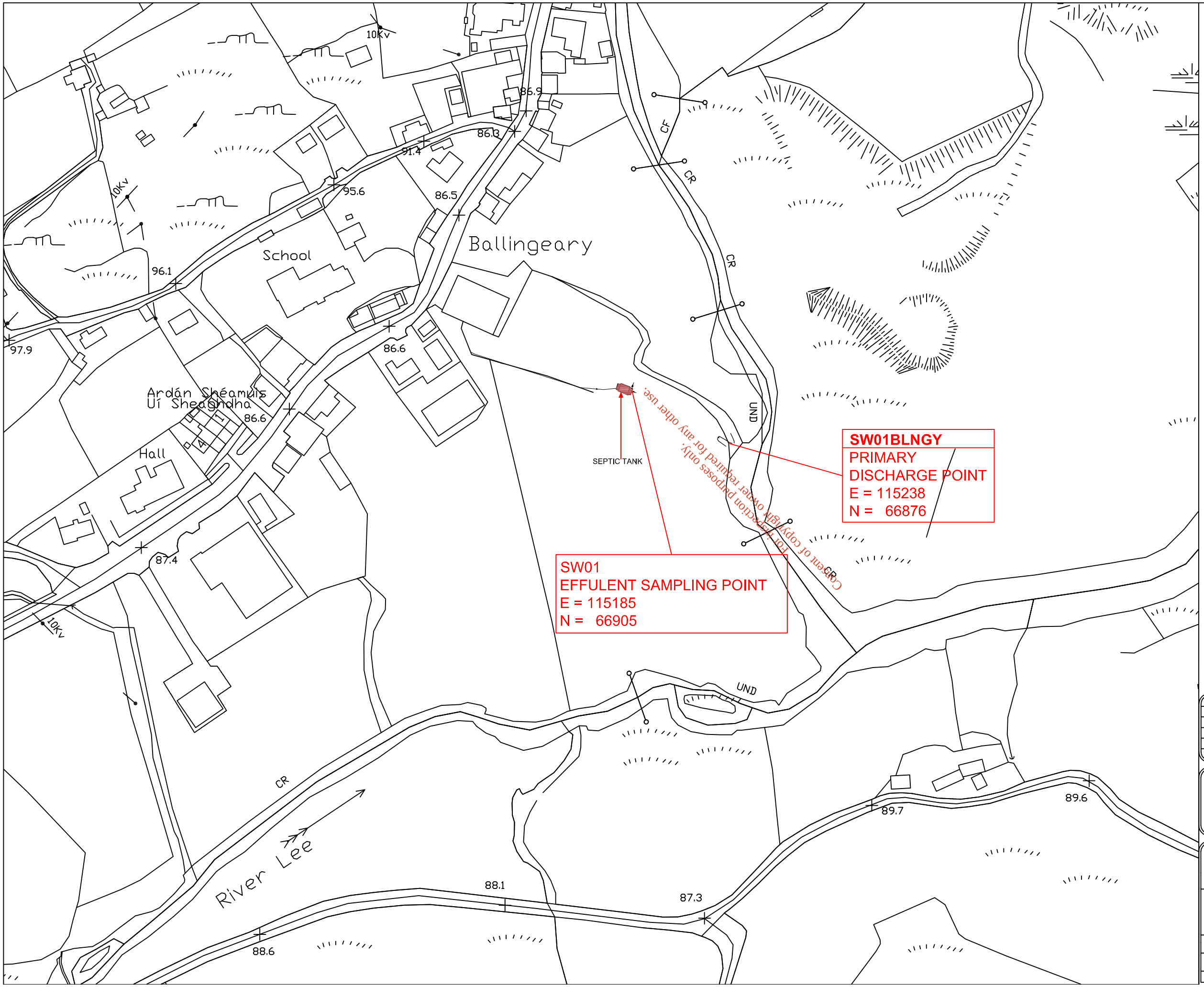
Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B1_Map3
Agglomeration Boundary Served
by Waste Water Treatment Works

Designed:	Checked:	Scales:	Drawing No:
ER	MH	1:5000 @ A3	B1_Map3
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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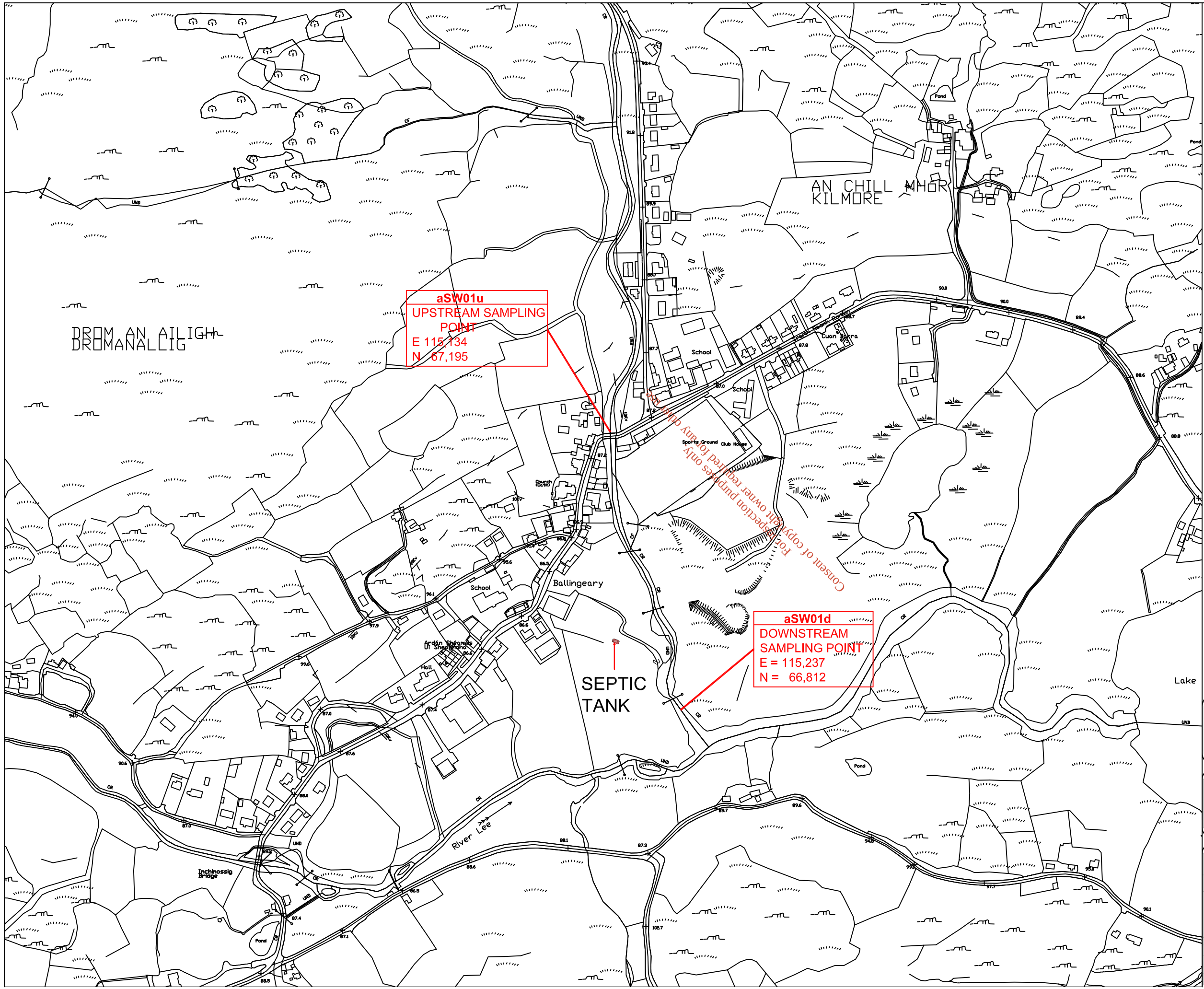
Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B2_Map4
Location of WWTP

Designed: ER	Checked: MH	Scales: 1:2000 @ A3	Drawing No: B2_Map4
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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Patricia Power,
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Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B2_Map5
Location of Upstream & Downstream Monitoring Points

Designed: ER	Checked: MH	Scales: 1:5,000 @ A3	Drawing No: B2_Map5
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0

Church (Cath)

10Kv

87.2

86.9

86.3

91.4

95.6

86.5

10Kv

School

Ballingeary

96.1

86.6

Ardán Shéamuis Uí Sheaghdha

86.6

Hall

87.4

LINE OF STORM OVERFLOW

SEPTIC TANK

150mmØ OUTFALL PIPE IL 83.923m

SW01BLNGY
PRIMARY DISCHARGE POINT
E = 115238
N = 66876

SW01
EFFLUENT SAMPLING POINT
E = 115181
N = 66906

CF

CR

CR

UND

CR

UND

Pond

89.6

89.7

94.8

88.1

87.3

River Lee

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Patricia Power,
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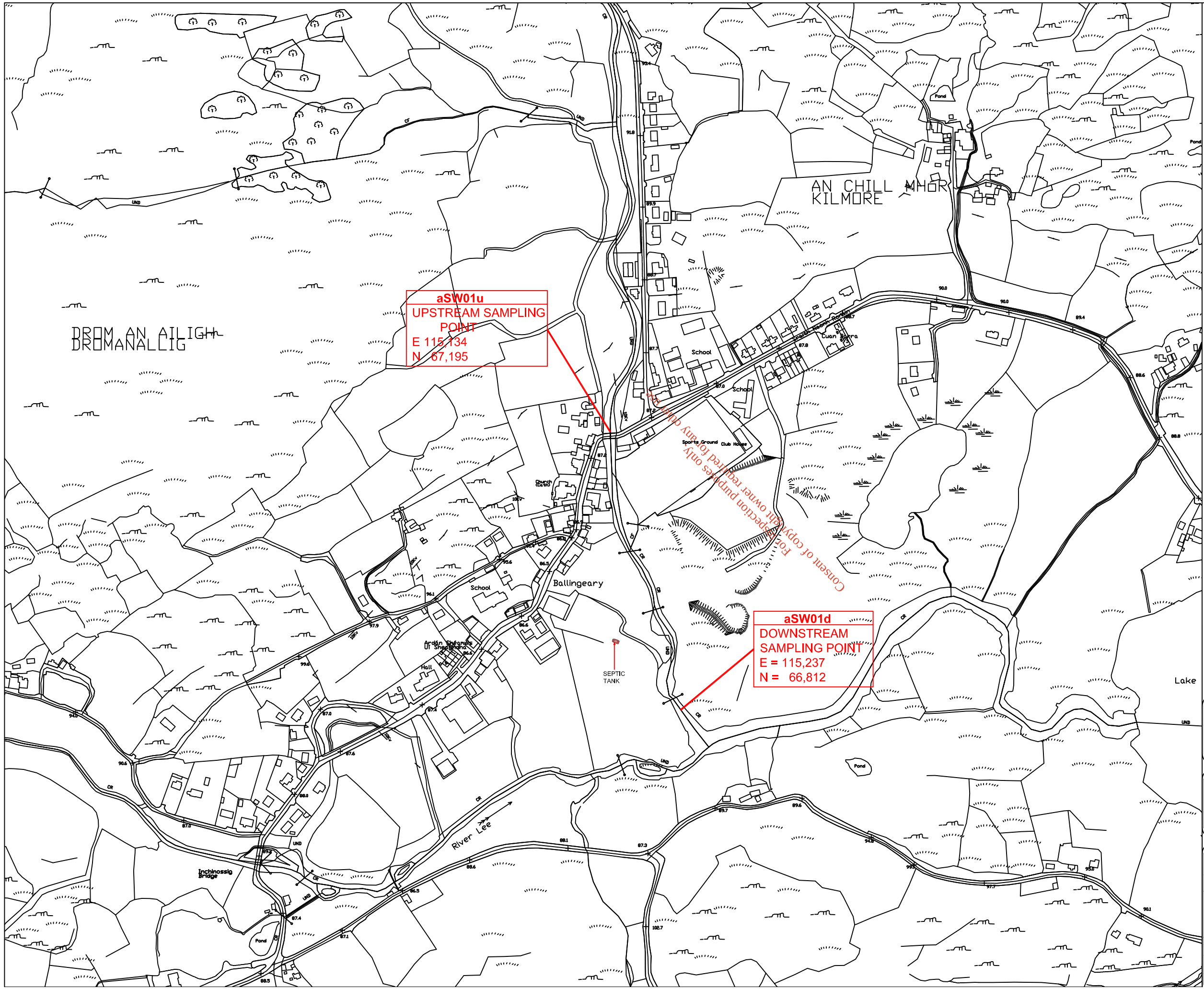
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B3_Map6
Location of Primary Discharge Point

Designed: ER	Checked: MH	Scales: 1:2000 @ A3	Drawing No: B3_Map6
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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Patricia Power,
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Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B3_Map7
Location of Upstream & Downstream Monitoring Points

Designed: ER	Checked: MH	Scales: 1:5,000 @ A3	Drawing No: B3_Map7
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0

Sports Ground
Club House
Church (Cath)
Ballingeary
School
Ardán Sheamuis Uí Sheaghdha
Hall
SW02BLNGY
STORM WATER
OVERFLOW OUTFALL
E = 115,145
N = 66,920
LINE OF STORM OVERFLOW
INLET SEPTIC TANK
SEPTIC TANK
150mmØ OUTFALL PIPE
IL 83.923m
SW01
EFFULENT SAMPLING POINT
E = 115185
N = 66905
87.2
86.9
86.3
91.4
95.6
86.5
96.1
97.9
86.6
86.6
87.4
89.7
89.6
10Kv
CF
CR
UND

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County Engineer
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Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B5_Map8
Location of Storm Water Overflow Points

Designed:	Checked:	Scales:	Drawing No:
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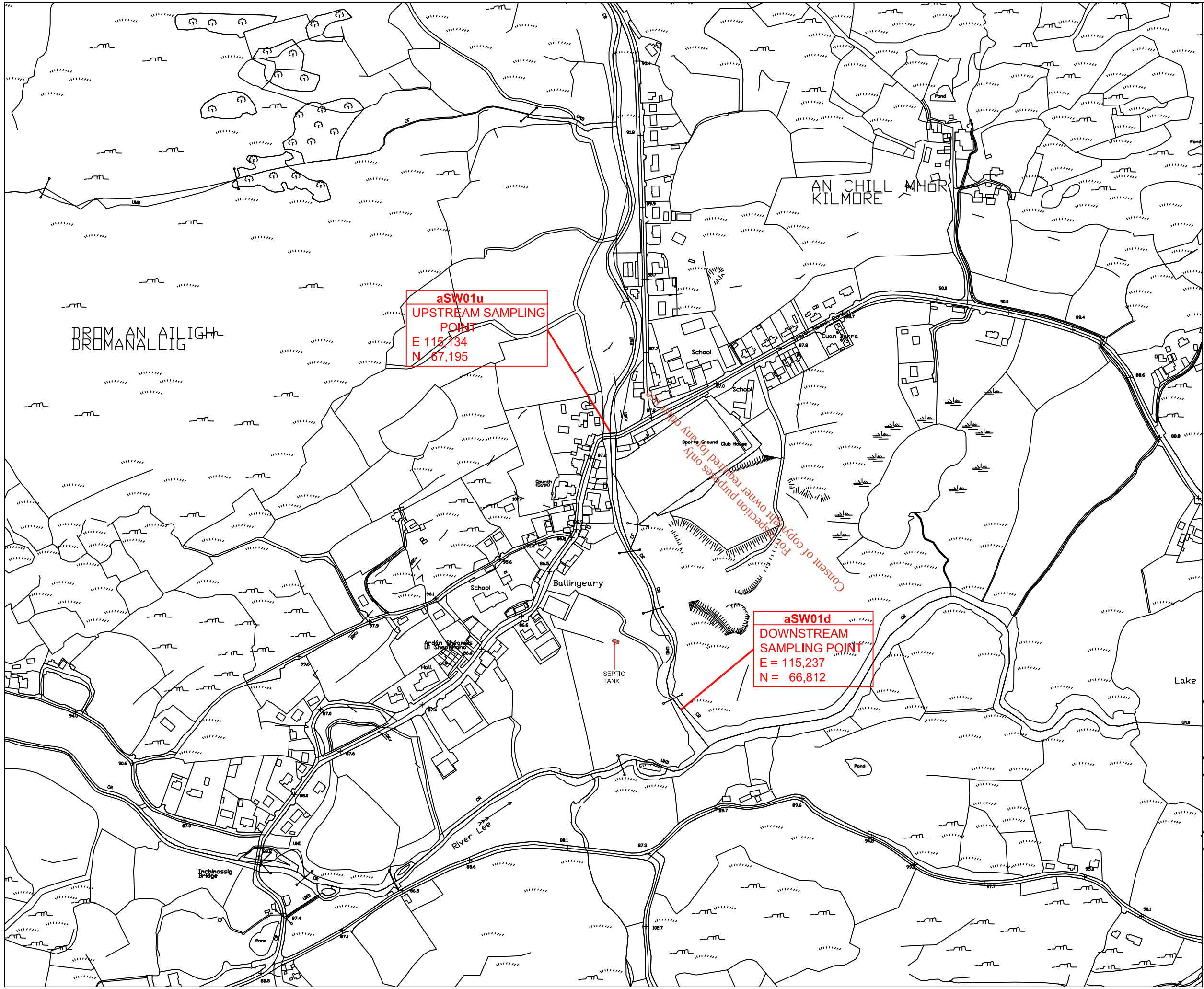
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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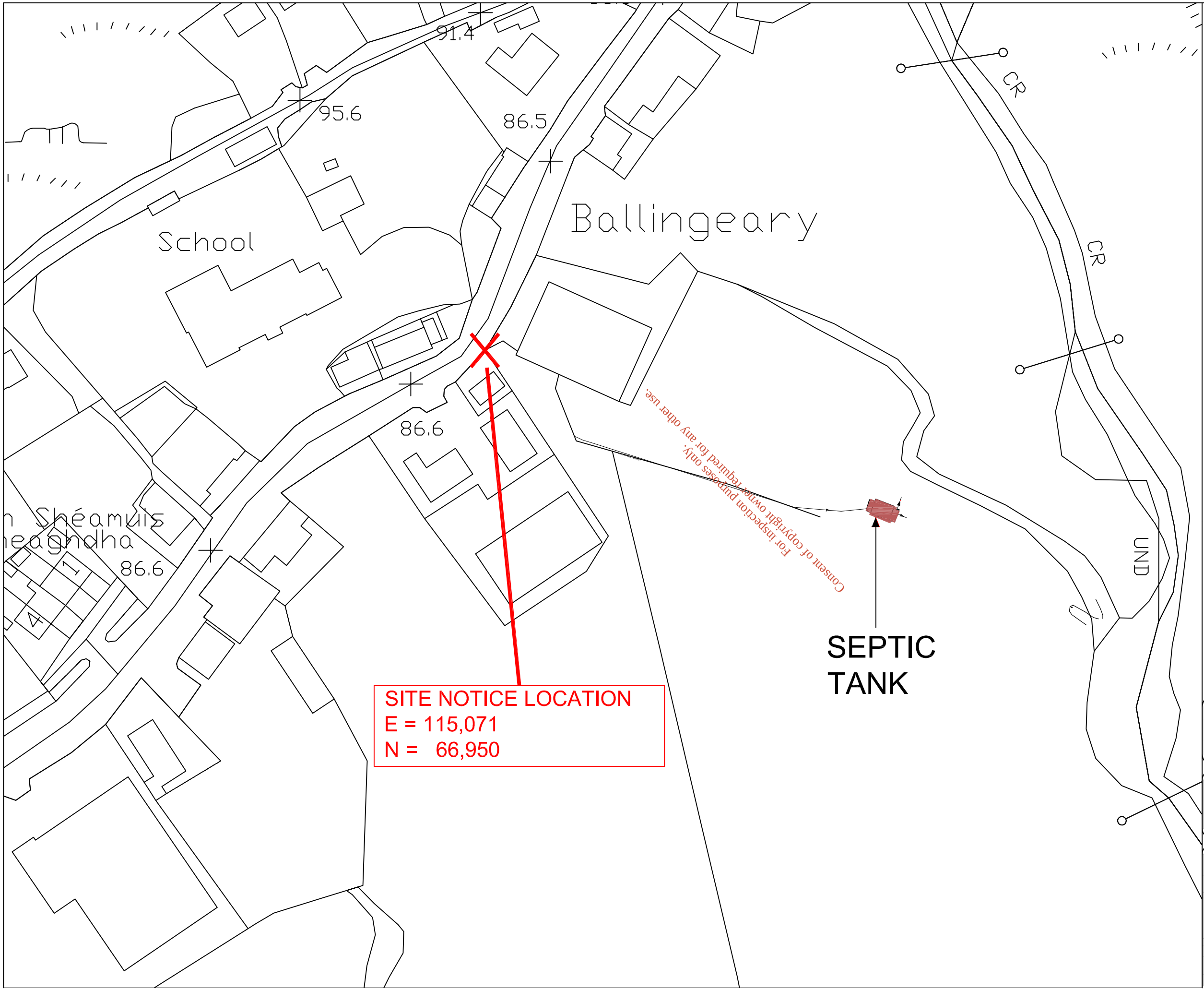
County Engineer
County Hall, Cork.

Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B5_Map9
Location of Upstream & Downstream Monitoring Points

Designed: ER	Checked: MH	Scales: 1:5,000 @ A3	Drawing No: B5_Map9
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0



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SOUTHERN DIVISION

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County Engineer
County Hall, Cork.

Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment B8_Map10
Location of Site Notice

Designed: ER	Checked: MH	Scales: 1:1,000 @ A3	Drawing No: B8_Map10
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0

Newspaper Advertisement

Cork County Council Southern Division

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Southern Division of Cork County Council, Carrigrohane Road, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the Agglomeration of Ballingeary at the following locations:

Plant Name	Location	National Grid Ref.
Ballingeary WWTP	Dromanallig, Ballingeary	E 115181 N 066906

Discharge	**Function**	**Townland**	**Receptor**	**Grid Reference**
Primary	**Main**	**Ballingeary**	**Bunsheelin**	**E 115239 N 066876**

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

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

and at

- **Cork County Council Offices, Water Services South, County Hall, Carrigrohane Road, Co. Cork, Telephone: 021 - 4276891Fax: 021 - 4276321.**

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above

Cork County Council Southern Division

CORK COUNTY COUNCIL

SITE NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Southern Division of Cork County Council, Carrigrohane Road, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the Agglomeration of Ladysbridge at the following locations:

Plant Name	Location	National Grid Ref.
Ballingeary WWTP	Dromanallig, Ballingeary	E 115181 N 066906

Discharge	Function	Townland	Receptor	Grid Reference
Primary	**Main**	**Ballingeary**	**Bunsheelin**	**E 115239 N 066876**

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

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Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above

Cork County Council Southern Division

CORK COUNTY COUNCIL

SITE NOTICE

APPLICATION TO THE ENVIRONMENTAL PROTECTION AGENCY FOR A WASTEWATER DISCHARGE LICENCE

In accordance with the Waste Water Discharge (Authorisation) Regulations 2007, Water Services Southern Division of Cork County Council, Carrigrohane Road, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the Agglomeration of Ballingeary at the following locations:

Plant Name	Location	National Grid Ref.
Ballingeary WWTP	Dromanallig, Ballingeary	E 115181 N 066906

Discharge	Function	Townland	Receptor	Grid Reference
Primary	**Main**	**Ballingeary**	**Bunsheelin**	**E 115239 N 066876**

A copy of the application for the Waste Water Discharge Licence and such further information relating to the application as may be furnished to the Agency in the course of the Agency's consideration of the Application shall as soon as is practicable after receipt by the Agency be available for inspection or purchase at the

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and at

- **Cork County Council Offices, Water Services South, County Hall, Carrigrohane Road, Co. Cork, Telephone: 021 - 4276891Fax: 021 - 4276321.**

Submissions in relation to the application may be made to the Environmental Protection Agency at its headquarters described above

6 BALLINGEARY SEWERAGE SCHEME

1.1 Summary of Brief

The brief for Ballingeary is to review the existing Preliminary Report prepared by Cork County Council and to develop and include the wastewater treatment plant in a design, build and operate contract for the Western Bundle Scheme. The collection network is also to be reviewed and included in a separate network contract.

1.2 Existing Situation

Ballingeary is a village settlement in the Muskery Gaeltacht area of south-west Cork of approximately 214 people and is situated about 23km from Macroom and 8km west of Inchigeelagh. It is located adjacent to the River Lee. Within the Local Area Plan 2005, Ballingeary is designated as a key village and is an important local service and commercial centre. The village itself also has a strong industrial base and is an important settlement as an employment provider for the wider area. Udaras na Gaeltachta, which promotes employment opportunities within the area has a number of industrial premises within the village most of which are located to the southwest of the village centre. The village also provides seasonal summer school facilities for students and this is a significant contributing factor which needs to be considered for the design of a new wastewater treatment facility.

Currently the sewage effluent needs of much of the village are served by a dilapidated and overloaded septic tank system located at the village centre discharging to the Bunsheelin River which in turn discharges to the River Lee at Ballingeary. The existing population has grown considerably since the system was installed in the 1930's and as such there is little beneficial use observed from using the system in its current state. Also due to its low lying position the septic tank is prone to flooding in severe conditions and this represents a significant health and safety risk to the village community and the surrounding ecosystem. The south-western part of the village which contains about 20% of the total population currently has no sewer network due to its topography and inability to achieve gravity flow.

1.3 Existing Reports

The preliminary report as commissioned by Cork County Council in July 2005 examines the feasibility of providing a new wastewater treatment facility for the town of Ballingeary. The report highlights the current unsustainable situation whereby, due to its current location, the existing septic tank is susceptible to flooding causing untreated sewage to be discharged to the surrounding environment. The report recommends that a new green field site be acquired which (a) is adjacent to the Lee or the Bunsheelin Rivers, (b) has sufficient clearance from existing and future developments, (c) has adequate road infrastructure and (d) is above the existing flood levels. The treatment plant itself is proposed in a single phase of construction with the likelihood of two treatment streams being utilised to accommodate existing and future flows and loads. The Preliminary Report recommended a site located behind the Údarás Na Gaeltachta Industrial Estate immediately adjacent to the River Lee

The report also examined the existing sewer network and found that many sections were in a very poor state of repair but that overall the network would have sufficient capacity to accommodate existing and potential future flows. The worst affected sections were found to be the sewers around Main street which suffered from cracks, intrusions and poor gradients. It was found that many of the sewer runs in this area of the network used vitrified clay pipes and in many instances were more than 70 years old with very poor structural integrity. However due to potential issues with traffic management and disruption to local businesses it is proposed to rehabilitate this section of the network rather than attempting to lay new sewer lines. The main disadvantage of this option however will be the inability to resolve the issue of poor gradients, improve cleansing velocities or eliminate sags within the sewer according to the Preliminary Report.

The river crossing under the Bunsheelin River, which utilises an inverted siphon type system was also examined in the report and found to be in poor condition. It is recommended that this siphon be abandoned and replaced with a pumping station to pump the sewage under the river. The report also recommends two extensions to the existing network with

one of the extensions requiring a pump set to transfer it to the other proposed extension.

1.4 Population Projections

To determine the existing population for Ballingeary, the Geodirectory was examined as a check against the estimated figures used in the County Council Preliminary Report. The latest census figures available (2006) show that the population of Ballingeary to be 214 persons up from the 2002 figure of 193 persons. Of the 214 residents the houses of only about 150 are currently connected to the public sewer with the remainder being served by individual septic tanks. Under the project works it is proposed to extend the current sewer network to accommodate these houses and also any possible future housing within the area will be required to connect to the new system. Therefore the current domestic contribution which would require treatment is 214PE.

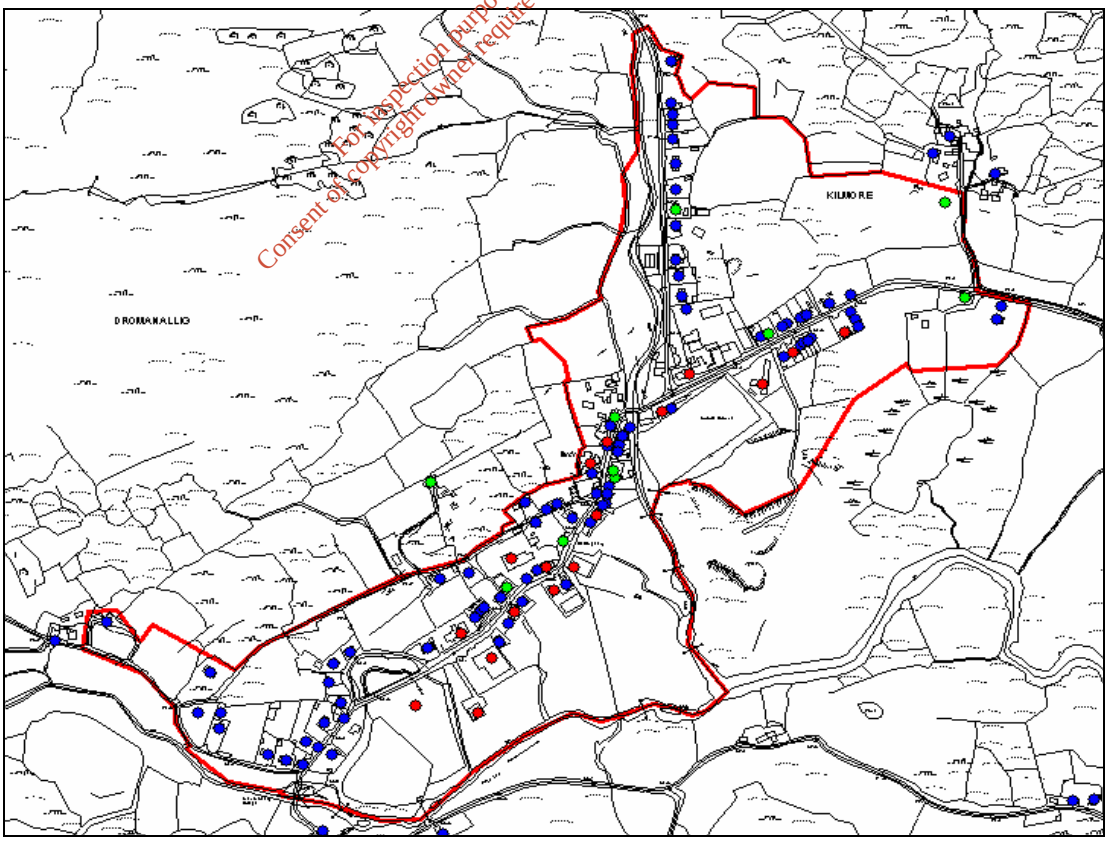


Fig 6.1 Ballingeary LAP 2005 and Geodirectory

The village also has quite a significant non-domestic contribution coming mainly from the schools, the commercial infrastructure in the area and the Udaras na Gaeltachta industrial estate. The latter currently employs 57 people full-time, 14 people part-time and 8 seasonal workers. There are then approximately 30 people employed in other services and businesses within the village. Other commercial premises which are currently connected into the public sewer network include 2 schools, 1 summer college, 2 pubs, GAA grounds and a community hall. The present non-domestic contribution is shown in Table 6.1

Therefore the current domestic contribution of 214 p.e. combined with the non-domestic contribution of 308 p.e. gives a total current population equivalent of 522 p.e. It should be noted that the population during the winter months may decrease to 342 p.e.

Table 6.1 Non-Domestic Contribution

Contribution	Flow (l/p/d)	p.e.	Load (g/p/d)	p.e.	Contributing p.e.
Industrial Estate. 79 workers in total	60	26.3	30	39.5	**39.5**
Other commercial premises 30 people	60	10	30	15	**15**
2 schools approx. 150 students total	40	33	20	50	**50**
2 pubs each with 4 residents & 42 customers	-	-	-	22	**22**
GAA grounds assume 1 match per month 30 players + spectators	1	0.66	0.71	0.47	**0.66**
Community hall, assume 1 meeting per month 100 people	0.36	0.2	0.36	0.6	**0.6**
Irish summer school including 160 students + 20 staff	180	180	60	180	**180**
Total Non-Domestic Contribution					**308**

The future contributions of flow and load likely to impact on the design of the wastewater treatment plant are (a) the development of further residential units on zoned lands as set out in the LAP 2005 and (b) the expansion of commercial and industrial services within the village area.

(a) Under the LAP 2005 provision is made for the development of additional residential units on zoned lands which can be classified as medium density (20units/ha) or low density (12units/ha). The LAP identifies 6.9 ha of land zoned for medium density residential development and a further 16.6ha of low density residential development. Fully developed these lands could

accommodate an additional 337 units with a potential population increase of some 944 p.e. However this includes the current population of 214 people. Thus assuming an occupancy rate of 2.8 persons per household the current number of houses is estimated to be 76. Therefore the number of additional future units which could be built is 261 giving a future population increase of 731 p.e.

(b) The data from the preliminary report makes reference to the fact that the likely population increase to the workforce in the industrial estate will be 64 additional full time staff, 1 additional part time worker and one less seasonal worker giving a total additional workforce of 86 people. It is also expected that an additional 24 people will be employed in other services and businesses throughout the village in the future

Table 6.2 Future Population Growth

Contribution	Population	BOD g/p/d	Total Load (kg/d)	p.e.
Domestic				
Potential 261 new units	731	60	43.86	731
Non - Domestic				
Additional Industrial Workers	86	30	2.58	43
Additional commercial employees	24	30	0.72	12
Total Additional Future p.e.				**786**

Looking at both the current and potential future population projections an ultimate p.e. of 1,316 is arrived at which is slightly higher than the 1,000 p.e. recommended in the Preliminary Report. The main reason for this discrepancy is the projections for future additional housing on zoned lands as set out under the Local Area Plans. The Preliminary Report arrives at a figure of 150 houses by assuming that zoned lands within the drainage area would be developed as minimum density. This figure does appear to be quite conservative given that the total actual area zoned for residential development is some 23.5ha. The methodology utilised in this review however follows the recommendations from the LAP 2005 which allocates 6.9ha for medium density development (20units/ha) and 16.6ha for low density development (12units/ha). Full developed this equates to an additional 337 units and assuming an occupancy rate of 2.81 gives a potential future population of some 953 p.e. Thus adding the current and future non-domestic contributions to this gives a figure of 1,316PE as outlined above and in Table 6.3.

Table 6.3 Potential Population

	Units	p.e.
Existing Residential Development	79	222
Existing Non-domestic Contribution	10	308
Zoned for future domestic growth	261	731
Future non-domestic growth		**55**
Proposed Future p.e. - 2028		**1,316**

It is therefore proposed that a new 1,300 p.e. plant be constructed in a single phase with the utilisation of two treatment streams to offer flexibility of treatment while maintaining the required effluent standards. Each treatment stream would have the capacity to treat the load from 650 p.e. with the preliminary treatment facilities being sized for the overall p.e. of 1,300

1.5 Water Quality Assessment

The main considerations that determine the effluent standards to set are derived from the following

- The statutory requirement to meet the effluent standards as set out in S.I 254 of 2001
- The statutory requirement to meet the water quality standards as set out in S.I. 293 of 1998
- The requirements as set out in the Phosphorous Regulations to improve the Biological Quality Rating of the receiving waters
- The assimilative capacity of the river in relation to the effluent parameters

Ballingeary village is located on the confluence of the Bunsheelin and the Lee Rivers and is situated 0.5km upstream of Louhg Aulla which is a proposed Natural Heritage Area. The current partially treated sewage from the septic tank serving the village discharges to the Bunsheelin River and the inefficiencies of the system were highlighted in 2004 when the South Western Fisheries Board analysed the various locations both upstream and downstream of the current discharge point. The analysis showed that upstream of the discharge point the BOD concentration was 2mg/l, at the discharge point the concentration was 297mg/l and downstream of the discharge point the concentration was found to be 41mg/l, thus showing the negative overall impact the septic tank is having on the water quality.

The Preliminary Report by Cork County Council proposed a effluent standard for the treatment plant of 20 mg/l BOD, 30 mg/l SS and 1 mg/l Total P.

With the acquisition of a new green field site from Udaras na Gaeltachta it is proposed that all treated waters from the new facility will be discharged to the Lee as opposed to the Bunsheelin. In assessing the allowable discharge effluent concentrations of the various parameters particular attention was paid to the Freshwater Fish Directive/Salmonid Regulations, the Surface Water Directive and also the Phosphorous Regulations. In assessing the current ability of the Lee to assimilate the treated effluent from the new facility, the EPA flow recorder at Inchigeelagh was used as an indication of the likely 95%ile flow at Ballingeary. There are very few rivers of note which drain into the catchment area which could be considered to have an impact on the flow rate. However due to the fact that the confluence of the Bunsheelin with the Lee is downstream of the discharge the 95%ile flow rate of this river has been subtracted from that at Inchigeelagh to give an assumed 95%ile flow rate for the Lee at Ballingeary of 0.06m^3/s. Also in attempting to determine the allowable phosphorous effluent concentration it is necessary to know the mean annual flow rate to make accurate predictions. Due to the unavailability of this data the annual flow rate has been assumed to be twice the 95%ile flow rate which may result in a very conservative concentration for allowable Total P in the effluent discharge. Calculations for the WAC can be found in Appendix A of this report.

BOD

The upstream sampling location used by both the EPA and Cork County Council is Inchinossig Bridge which is just a few hundred meters upstream of the proposed outfall. The latest data available for BOD at this location is from the EPA water quality assessment report 2001 – 2003 and from the Cork County Council Environmental Lab. The former gives a mean background BOD concentration of 0.6mg/l while the latter reports a figure of 1.075mg/l. For the purpose of this report an average of the two figures has been taken to give a mean BOD concentration of 0.83mg/l. The EPA water quality assessment report also indicates that the river upstream of the outfall is unpolluted and categorises it as have a biological quality

rating of Q4. With regard to the Salmonid Regulations the maximum allowable downstream concentration is 4mg/l with a safety factor of 1mg/l.

Table 6.3 Allowable BOD Effluent Concentration to River

p.e.	WWTP DWF (m^3/d)	*Allowable Effluent Conc. (mg/l)*
Phase I (1,300)	*293*	*60.18*

Nitrogen

Total Nitrogen

Total Nitrogen comprises Ammonia, Organic Nitrogen and Oxidised Nitrogen. The UWWTR specify a target effluent total nitrogen concentration of 15 mg/l should the local conditions require it. However, the limiting nutrient is usually Phosphorus in freshwaters rather than Nitrogen, and therefore a Total Nitrogen effluent standard should not be required.

Ammonia

In order to comply with the Freshwater Fish Directive an upper limit of 1mg/l is the maximum background Ammonia concentration allowable. Cork County Council laboratory data indicates an upstream concentration of 0.04mg/l NH_4 and therefore that maximum allowable effluent concentration of Ammonia that can be discharged is as follows;

Table 6.4 Allowable Ammonia Effluent Concentration to River

p.e.	WWTP DWF (m^3/d)	*Allowable Effluent Conc. (mg/l)*
Phase 1 (1,300)	*293*	*17.99*

The main concern with regard to Nitrogen discharges however is the adverse effects of Nitrates on aquatic habitats. With its close proximity to Lough Aulla it is necessary to examine the recorded upstream and downstream Nitrate concentrations to determine if Nitrate reduction will be a requirement.

The latest data available for Cork County Council Environmental Laboratory however indicates an upstream Nitrate concentration of 2.65mg/l and a downstream concentration of 3.23 mg/l which is well within the 5.65mg/l NO_3 as specified under the Nitrates Directive. However as indicated above the allowable ammonia concentration that can be

discharged to the river at that point is 17.99 mg/l and it is felt that an ammonia standard should be adopted as it is easily achievable in a conventional activated sludge plant.

Phosphorus

This is considered to be the limiting nutrient when it comes to the impacts of eutrophication on aquatic environments and as such every effort should be employed to minimise its discharge from treatment facilities. The water quality data received from the Environmental Laboratory indicated an upstream orthophosphate concentration of 0.0087mg/l which would indicate a biotic index rating of 5. Under the Phosphorus Regulations the Q rating of a water-body should be matched or improved depending on which category it is in. For a water-body with a Q rating of 5 the median MRP concentration to be achieved is 0.015mg/l and this has been assumed as the upper limit value in calculating the allowable effluent concentration.

Table 6.5 Allowable Ortho P Effluent Concentration to River

p.e.	WWTP DWF (m^3/d)	*Allowable Effluent Conc. (mg/l)*
Phase 1 (1,300)	293	*0.42*

As can be seen from the above table the allowable effluent Ortho P concentration is quite stringent and may be difficult to guarantee such a low value on a continuous basis. It is recommended that chemical precipitation with Ferric Sulphate or Aluminium Chloride be utilised to reduce the discharge concentrations as best as it practically possible.

Pathogens

As the Preliminary report points out it is quite difficult to predict the likely numbers of pathogens and coliforms which will require treatment and it is therefore difficult to predict the likely removal efficiency which the treatment process will achieve. For this reason the report recommends that provision be made for the monitoring of coliforms and faecal coliforms downstream of the discharge once the plant is operational and if necessary the installation of a UV disinfection system should be considered if coliform concentrations exceed specified limits.

Discharge Specifications

The appropriate standards for Ballingeary are as follows and are unchanged by those proposed by Cork County Council with the exception of the ammonia standard:

Table 6.6 Effluent Quality Standards

Parameter	Phase 1 Concentration (mg/l)
BOD	20
Suspended Solids	30
Total Ammonia	10
Total P	1

1.6 Phasing

The proposal for the provision of a new wastewater treatment plant to serve the village of Ballingeary can be conducted in a single phase. It will require the construction of a 1,300 p.e. plant with the possibility of two aeration streams which will allow variation and flexibility while ensuring efficient operation of the treatment process. Each stream will have a 650 p.e. treatment capacity and once design loads have been reached for the first stream, the second stream can then be brought into operation

1.7 Design Parameters

The flows and average daily flows likely to be received at the treatment works under various design conditions are summarised in the table overleaf:

Table 6.7 Design Parameters For Ballingeary WWTW

Parameter	Phase 1
Population Equivalent	1,300
Wastewater flow l/h/d	225
DWF m^3/d	292.5 m^3/d
Flow to Full Treatment (3DWF) m^3/d	877.5 m^3/d
Average BOD Load	78 kg/day
Average Total Nitrogen Load	14.3 kg/day
Average Phosphorus Load	2.34 kg/day
Average SS Load	91 kg/day
Storm Tank Volume Required (3DWF for 2 hrs)	73.125 m^3
Storm Tank Volume Provided	73.125 m^3

The scope of the works for the new treatment facility should as a minimum incorporate the following

- New Inlet Works shall be provided at the Phase 1 construction.
- A new Storm water Holding Tank shall be provided at Phase 1 (volume of approx 73m3).
- Sludge Thickening and Storage facilities shall be provided at Phase 1 to cater for Phase 2 loads

Other facilities to be provided under Phase 1 include the following:

- Administration and Control Building
- Flow Dividing Chamber to split treatment flows
- 2 No. Aeration Tanks c/w diffused aeration
- 2 No. Final Settlement Tanks with sludge return and waste facilities
- Phosphorus Dosing Facility
- Site Roads and Fencing, Landscaping, Process and Drainage pipework, Telemetry and SCADA control system

From a review of the Preliminary Report, the recommended site is located behind the Údarás Na Gaeltachta Industrial Estate immediately adjacent to the River Lee. There is an existing road servicing the estate, the extension of which could be easily facilitated by the construction of a new treatment works. The ground level would have to be raised to prevent flooding of the treatment units. A schematic has been shown in Figure 6.2 indicating an appropriate treatment plant layout for a conventional extended aeration treatment plant. The sketch indicates that the proposed site will easily accommodate a treatment plant sized for a population equivalent of 1,300 p.e.

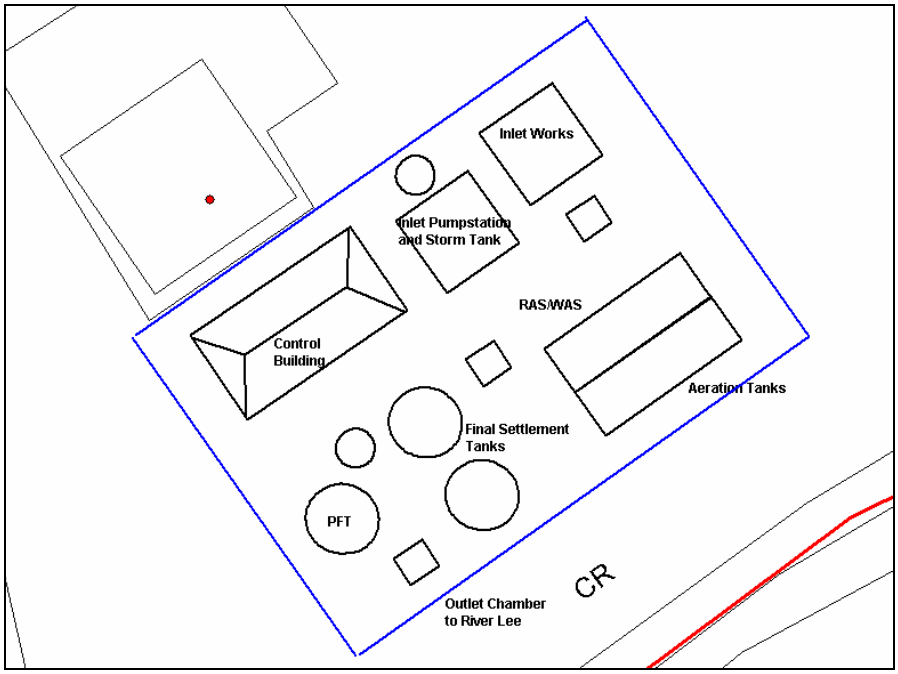


Figure 6.2 Layout Schematic of Ballingeary WWTW

1.8 Collection Network

As part of the Preliminary Review an extensive survey of the existing network was undertaken and it was determined that extensive rehabilitation and some replacement of the network would be required. The main recommendations from the report in relation to the existing network were as follows:

- Rehabilitate 585m of existing 225mm diameter sewers
- Lay 510m of 225mm foul sewers
- Lay 160m of 300mm storm water sewers
- Replace 64m of 225mm foul sewer
- Provide 3 No. Pumping stations
- Lay 580m of pumped rising main

The main disadvantage of the rehabilation works will be the inability to resolve the issue of poor gradients, improve cleansing velocities or eliminate sags.

A detailed review of the proposed collection network upgrades cannot be completed until detailed preliminary drawings are submitted for review by Cork County Council.

1.9 Cost Estimates

A detailed estimated breakdown of both the M&E works and the Civil works for the project are outlined in the table below and compared with the initial costs provided in the preliminary report

Table 6.8 WWTP M&E Cost Estimates

Item	Nicholas O'Dwyer	Preliminary Report
Pretreatment - Inlet Pumping Station and Storm Overflow Screen		
Stormwater Treatment		
Preliminary Treatment		
Biological Treatment - Aeration Tank		
Biological Treatment - Final Settlement		
Phosphorus Removal - Chemical		
Final Effluent		
Sludge Return and Waste		
Sludge Thickening - PFT		
Instrumentation		
Electrical Installation		
Control Panel		
SCADA/Control System		
Odour Control		
Misc.		
Total M&E Works		

Table 6.9 WWTP Civil Works Cost Estimate

Item	Nicholas O'Dwyer	Preliminary Report
Inlet Pumpstation		
Stormwater Treatment		
Preliminary Treatment		
Biological Treatment - Aeration Tank		
Biological Treatment - Final Settlement		
Phosphorus Removal - Chemical		
Sludge Return and Waste		
Sludge Thickening - PFT		
Interconnecting Pipework and Ductwork		
Outfall Pipeline		
Raising ground level & site access		
Site Fencing, Gates and Walls		
Landscaping		
Administration and Control Building		
Sundry		
Total Civil Works		

Table 6.10 WWTP Cost Summary

Item	Nicholas O'Dwyer	Preliminary Report
Total M&E and Civil Works		
Preliminaries and Contingencies @ 20% NOD		

Total Estimate (ex VAT)		

For the purpose of this report, no cost estimate was conducted in terms of provision and rehabilitation of the existing sewer network and all estimates used were taken from the initial preliminary report. This estimate will need to be reviewed at contract document stage when final designs and requirements are established.

Table 6.11 Network Rehabilitation & Extension

Item	Preliminary Report Cost Estimate
Rehabilitate 585m of Sewer Replace 56m of sewer line Installation of 2 pumping stations Provision of 160m of surface water drains Separation of Storm Water From Foul water Other minor repairs to network Extension of network to include gravity & pumped sewers	
Total For Network Repairs & Extension	

Table 6.12 Summary of Estimated Capital Costs

Item	Nicholas O'Dwyer	Preliminary Report
Gravity Network WWTW **Sub-Total** VAT @ 13.5% **Total (including VAT)**		

The table overleaf outlines the estimated projected operational costs for the treatment plant at Ballingeary based on our database of market costs for similar sized works. Costs have been estimated for the existing population (Year 1) and the design population (Year 20). It is noted that no operational cost estimates were available from the original Preliminary Report.

Table 6.13 Estimated Operating Costs

Item	Year 1	Year 20
Labour Energy/Electricity Costs Consumables Disposal Costs Chemical Analysis Maintenance Contracts Insurance/Overheads Scheduled Maintenance Capital Replacement		
Annual Running Costs		

Table 6.14 Cost Summary for Ballingeary

Design Build Capital Cost	Network Capital Costs	O&M Estimate for Year 1
€1,556,827.29		

1.10 Conclusions and Recommendations

It is proposed to install a new 1,300 p.e. treatment facility on a green field site to accommodate the future flows and loads for the town of Ballingeary. The new works will be required to treat the effluent to a 20:30 (BOD:SS) standard with a Total P concentration of 1mg/l and Ammonia concentration of 10 mg/l.

Recommendations were also made in the preliminary report in relation to the rehabilitation of the collection system within the town. However due to the lack of sufficient detailed drawings and CCTV evidence of sewer condition it has not been possible to complete a detailed review of the system.

Nevertheless, we feel that the plant is suitable for inclusion in the proposed bundled wastewater upgrade and operate scheme. The exact procurement methodology will be addressed in a separate Public Private Partnership (PPP) Applicability Report. Further investigation is recommended for input to Contract Documents in order to properly collate data for inclusion in any scheme and a flow and load survey at the existing septic tank will provide details on the incoming load.

Cork County

Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost
Cork North		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000
Cork South		
Ballyvourney/ Ballymakeery Sewerage Scheme	S	3,049,000
Cobh/ Midleton/ Carrigtwohill Water Supply Scheme	W	10,135,000
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000
Cork Water Strategy Study (G)	W	941,000
Kinsale Sewerage Scheme	S	20,000,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000
		41,274,000

Schemes to start 2007	W/S	Est. Cost
Cork North		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kilbrin)	S	5,150,000
Cork West		
Skibbereen Sewerage Scheme	S	20,000,000
		25,150,000

Schemes to start 2008	W/S	Est. Cost
Cork North		
Mallow/ Ballyviniter Regional Water Supply Scheme (H)	W	8,662,000
Mallow Sewerage Scheme (H)	S	5,408,000
Cork South		
Ballincollig Sewerage Scheme (Nutrient Removal) (G)	S	948,000
Ballingeary Sewerage Scheme	S	1,296,000
Bandon Sewerage Scheme Stage 2	S	14,729,000
City Environs (CASP) Strategic Study (G)	S	153,000
Cloghroe Sewerage Scheme (Upgrade)	S	683,000
Coachford Water Supply Scheme	W	1,318,000
Garrettstown Sewerage Scheme	S	2,153,000
Inniscarra Water Treatment Plant Extension Phase 1	W	2,678,000
Little Island Sewerage Scheme (G)	S	2,200,000
Cork West		
Bantry Sewerage Scheme	S	7,148,000
Dunmanway Sewerage Scheme	S	2,153,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000
Schull Water Supply Scheme	W	5,253,000
		61,137,000

Schemes to start 2009	W/S	Est. Cost
Cork North		
Banteer/Dromahane Regional Water Supply Scheme	W	1,576,000
Conna Regional Water Supply Scheme Extension	W	2,627,000
Cork NE Water Supply Scheme	W	4,326,000
Cork NW Regional Water Supply Scheme	W	6,046,000
Millstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000

Schemes to start 2009 contd.	W/S	Est. Cost
Cork South		
Ballincollig Sewerage Scheme (Upgrade) (G)	S	22,248,000
Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS)	S	73,542,000
Shannagarry/ Garryvoe/ Ballycotton Sewerage Scheme	S	3,780,000
Youghal Sewerage Scheme	S	14,420,000
Cork West		
Ballydehob Sewerage Scheme	S	683,000
Bantry Water Supply Scheme	W	14,935,000
Clonakilty Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
		164,629,000

Serviced Land Initiative	W/S	Est. Cost
Cork North		
Ballyclough Water Supply Scheme	W	139,000
Ballyhooley Improvement Scheme	W/S	139,000
Broghill-Rathgoggin Sewerage Scheme	S	406,000
Bweeng Water Supply Scheme	W	115,000
Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Clondulane Sewage Treatment Plant	S	417,000
Freemount Sewerage Scheme	S	150,000
Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Rathcormac Sewerage Scheme (incl. Water)	W/S	555,000
Spa Glen Sewerage Scheme	S	736,000
Uplands Fermoy Sewerage Scheme (incl. Water)	W/S	1,174,000
Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cork South		
Ballincollig Sewerage Scheme (Barry's Rd Foul and Storm Drainage) (G)	S	1,164,000
Belgooley, Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Blarney Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Carrigtwohill Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
Castlematyr Wastewater Treatment Plant Extension	S	1,200,000
Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dripsey Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Glounthane Sewerage Scheme (G)	S	1,576,000
Innishannon Sewerage Scheme	S	277,000
Innishannon Wastewater Treatment Plant	S	694,000
Kerrypike Sewerage Scheme	S	832,000
Kerrypike Water Supply Scheme	W	416,000
Killeagh Wastewater Treatment Plant Extension	S	1,200,000
Killeagh Water Supply Scheme (includes Sewerage)	W/S	485,000
Killeens Sewerage Scheme	S	420,000
Kilnagleary Sewerage Scheme	S	694,000
Midleton Wastewater Treatment Plant Extension	S	4,050,000

Cork County contd.

Water Services Investment Programme 2007 - 2009

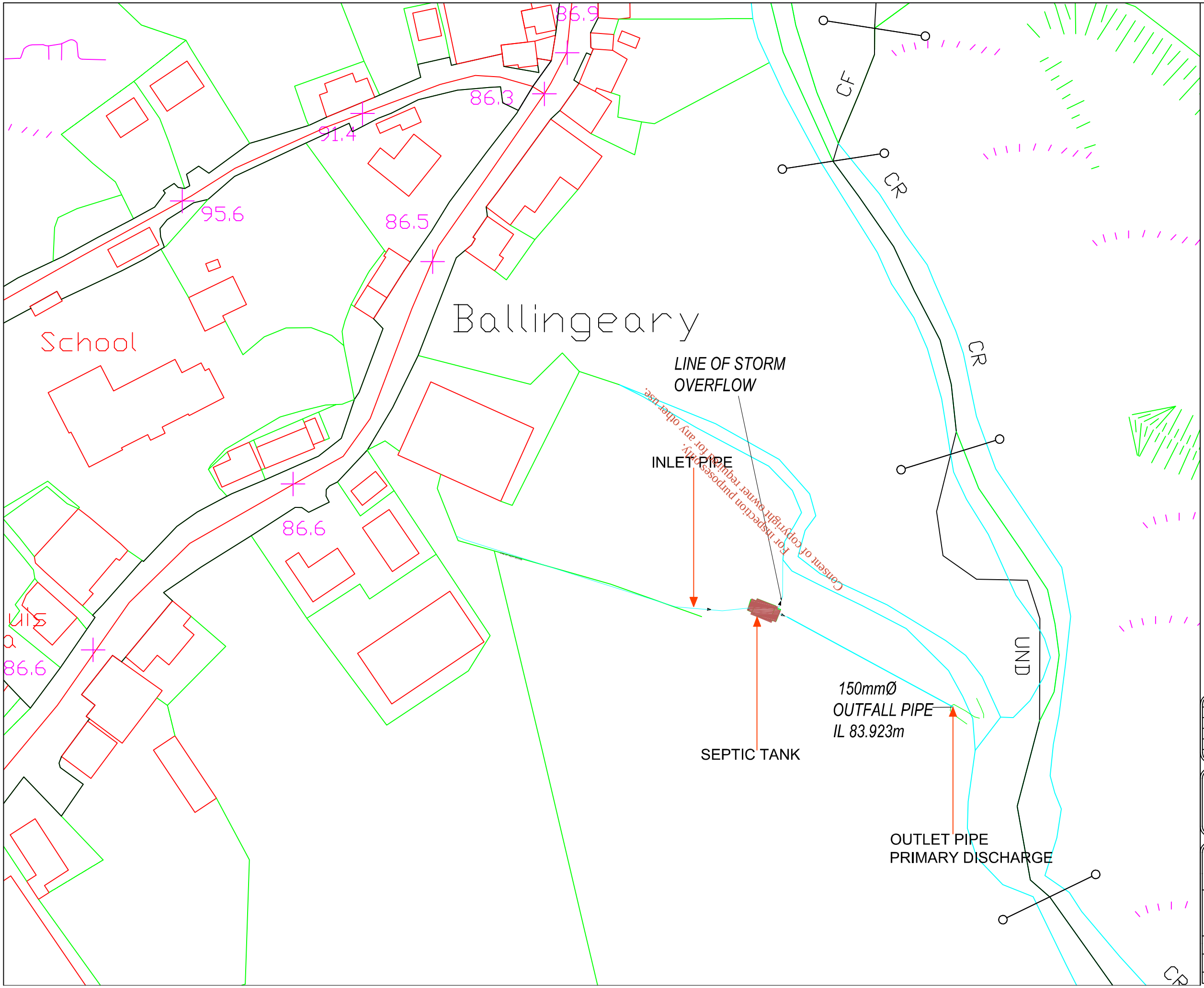
Serviced Land Initiative contd.	W/S	Est. Cost
Cork South contd.		
Mogeely, Castlemartyr & Ladysbridge Water Supply Scheme	W	2,566,000
North Cobh Sewerage Scheme (G)	S	3,193,000
Riverstick Water Supply Scheme (incl. Sewerage)	W/S	525,000
Rochestown Water Supply Scheme	W	2,700,000
Saleen Sewerage Scheme	S	1,051,000
Youghal Water Supply Scheme	W	2,300,000
Cork West		
Castletownshend Sewerage Scheme	S	1,576,000
		50,797,000
Rural Towns & Villages Initiative		
Cork North		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000
Cork South		
Innishannon (Ballinadee/ Ballinspittle/ Garrettstown) Water Supply Scheme	W	6,726,000
Cork West		
Ballylicky Sewerage Scheme	S	2,153,000
Baltimore Sewerage Scheme	S	3,162,000
Castletownbere Sewerage Scheme	S	5,202,000
Schull Sewerage Scheme	S	3,523,000
		24,950,000
Schemes to Advance through Planning		
Cork North		
Mitchelstown North Galtees Water Supply Scheme	W	3,152,000
Mitchelstown Sewerage Scheme	S	3,000,000
Newmarket Sewerage Scheme	S	3,152,000

Schemes to Advance through Planning cond.	W/S	Est. Cost
Cork South		
Carrigtwohill Sewerage Scheme (G)	S	20,000,000
Cork Sludge Management (G)	S	14,420,000
Cork Water Supply Scheme (Storage - Mount Emla, Ballincollig & Chetwind) (G)	W	8,500,000
Inniscarra Water Treatment Plant (Sludge Treatment)(G)	W	5,356,000
Macroom Sewerage Scheme	S	5,150,000
Minane Bridge Water Supply Scheme	W	1,421,000
Cork West		
Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
Cape Clear Water Supply Scheme	W	1,679,000
Castletownbere Regional Water Supply Scheme	W	8,405,000
Glengarriff Sewerage Scheme	S	2,500,000
Roscarberry/Owenahincha Sewerage Scheme	S	1,576,000
Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
		95,646,000
Water Conservation Allocation		**12,206,000**
Asset Management Study		**300,000**
South Western River Basin District (WFD) Project[1]		**9,400,000**
Programme Total		**485,489,000**

[1] This project is being led by Cork County Council on behalf of other authorities in the River Basin District

(H) Refers to a Hub as designated in the National Spatial Strategy

(G) Refers to a Gateway as designated in the National Spatial Strategy



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N

Rev.	Date	By	Description

CORK COUNTY COUNCIL
SOUTHERN DIVISION

Noel O Keeffe, B.E. C.Eng. Eur.Ing F.I.E.I.MICE
County Engineer
County Hall, Cork.

Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment C1_Map11
Operation Information Requirements

Designed: ER	Checked: MH	Scales: 1:1000 @ A3	Drawing No: C1_Map11
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0

Irish National Accreditation Board

Accreditation Certificate

Cork County Council

Wastewater Testing Laboratory, Inniscarra, Co. Cork

Testing Laboratory

Registration number: **016T**

is accredited by the Irish National Accreditation Board (INAB) to undertake testing as detailed in the Schedule bearing the Registration Number detailed above, in compliance with the International Standard **ISO/IEC 17025:2005 2nd Edition** *"General Requirements for the Competence of Testing and Calibration Laboratories"* ***(This Certificate must be read in conjunction with the Annexed Schedule of Accreditation)***

Date of award of accreditation: **01:10:2002**
Date of last renewal of accreditation: **20:09:2007**
Expiry date of this certificate of accreditation: **01:10:2012**

This Accreditation shall remain in force until further notice subject to continuing compliance with INAB accreditation criteria, ISO/IEC 17025 and any further requirements specified by the Irish National Accreditation Board.

Manager: Tom Dempsey — Mr Tom Dempsey

Chairperson: Máire C Walsh — Dr Máire Walsh

Issued on 23 June 2008

Organisations are subject to annual surveillance and are re-assessed every five years. The renewal date on this Certificate confirms the latest date of renewal of accreditation. To confirm the validity of this Certificate, please contact the Irish National Accreditation Board.
The INAB is a signatory of the European co-operation for Accreditation (EA) Testing Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement.

Wilton Park House, Wilton Place, Dublin 2, Ireland. Tel +353 1 607 3003 Fax +353 1 607 3109 E-mail inab@inab.ie Web www.inab.ie

Irish National Accreditation Board

Wilton Park House, Wilton Place, Dublin 2, Ireland
Tel +353 1 607 3003 Fax +353 1 607 3109
E-mail inab@inab.ie Web www.inab.ie

Schedule of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

(Annex to Accreditation Certificate)

Permanent Laboratory:
Category A

CORK COUNTY COUNCIL

Chemistry Testing Laboratory

Initial Registration Date :	**25-April-1991**
Postal Address:	Waste Water Laboratory
(Address of other locations	Inniscarra
as they apply)	Co. Cork
Telephone:	+353 (21) 4532700
Fax:	+353 (21) 4532777
E-mail:	
Contact Name:	Ms M Cherry
Facilities:	Normally not available for Public testing

Irish National Accreditation Board

Wilton Park House, Wilton Place, Dublin 2, Ireland
Tel +353 1 607 3003 Fax +353 1 607 3109
E-mail inab@inab.ie Web www.inab.ie

Schedule of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

Permanent Laboratory:
Category A

THE IRISH NATIONAL ACCREDITATION BOARD (INAB) is the Irish body for the accreditation of organisations including laboratories.

Laboratory accreditation is available to testing and calibration facilities operated by manufacturing organisations, government departments, educational institutions and commercial testing/calibration services. Indeed, any organisation involved in testing, measurement or calibration in any area of technology can seek accreditation for the work it is undertaking.

Each accredited laboratory has been assessed by skilled specialist assessors and found to meet criteria which are in compliance with ISO/IEC 17025 or ISO/IEC 15189 (medical laboratories). Frequent audits, together with periodic inter-laboratory test programmes, ensure that these standards of operation are maintained.

Testing and Calibration Categories:

Category A: Permanent laboratory calibration and testing where the laboratory is erected on a fixed location for a period expected to be greater than three years.

Category B: Site calibration and testing that is performed by staff sent out on site by a permanent laboratory that is accredited by the Irish National Accreditation Board.

Category C: Site calibration and testing that is performed in a site/mobile laboratory or by staff sent out by such a laboratory, the operation of which is the responsibility of a permanent laboratory accredited by the Irish National Accreditation Board.

Category D: Site calibration and testing that is performed on site by individuals and organisations that do not have a permanent calibration/testing laboratory. Testing may be performed using

(a) portable test equipment
(b) a site laboratory
(c) a mobile laboratory or
(d) equipment from a mobile or site laboratory

Standard Specification or Test Procedure Used:

The standard specification or test procedure that is accredited is the issue that is current on the date of the most recent visit, unless otherwise stated.

Glossary of Terms

Facilities:

Public calibration/testing service:	Commercial operations which actively seek work from others.
Conditionally available for public calibration/testing:	Established for another primary purpose but, more commonly than not, is available for outside work.
Normally not available for public calibration/testing:	Unavailable for public calibration/testing more often than not.

Laboratory users wishing to obtain assurance that calibration or test results are reliable and carried out to the Irish National Accreditation Board criteria should insist on receiving an accredited calibration certificate or test report. Users should contact the laboratory directly to ensure that this scope of accreditation is current. INAB will, on request, verify the status and scope.

Scope of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

Cork County Council

Chemical Testing Laboratory

Permanent Laboratory:
Category A

INAB Classification number (P9) Materials/products tested		Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766	**Waters**	Chemical analysis:	Documented in-house methods based on Standard Methods for the Examination of Water & Wastewater 21 st Edition APHA (See Note 1)
.01	Waters for domestic purposes *Surface and ground waters*	Biochemical Oxygen Demand 2 - 145,000 mg/l	CP No. 1 Membrane electrode
		pH 2 - 12	CP No. 5 Electrometry
		Suspended Solids 0.5 - 17,500 mg/l	CP No. 3 Gravimetric
		Chemical Oxygen Demand 21 - 135 mg/l 120 - 670,000 mg/l	CP No. 6 Reflux - colourmetric method
		Total phosphorus 0.2 - 5,300 mg/l	US-EPA Approved method/HACH Method CP No.20
		Ammonia 0.1 - 1,000 mg/l NH_3 - N	Documented in-house method CP22 by Konelab based on Method for the Examination of Waters and Associated Material HMSO:1981

Scope of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

Cork County Council

Chemical Testing Laboratory

Permanent Laboratory:
Category A

INAB Classification number (P9) Materials/products tested		Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766	**Waters**		
.01	Waters for domestic purposes *Surface and ground waters*	Orthophosphate as P (Konelab) Range: 0.005-1.00 mg O-PO4 P/L High Range: 1000 mg O-PO4 P/L Method Detection Limit: 0.02 mg O-PO4 P/L	CP No. 23 Ascorbic Acid Method
		Chloride (Konelab) Range: 25-250 mg/L Cl- High Range Conc.: 86,000 mg/L Cl- Method Detection Limit: 25 mg/L Cl-	CP No. 24 Ferricyanide Method
		Sulphate (Konelab) Range: 30-250 mg/L SO4/L High Range Conc.: 35,000 mg/L SO4/L Method Detection Limit: 30 mg SO4/L	CP No. 25 Documented in-house method by Konelab based on method for the examination of waters and waste waters and associated material HMSO: 1981

Scope of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

Cork County Council

Permanent Laboratory:
Category A

Chemical Testing Laboratory

INAB Classification number (P9) Materials/products tested		Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766	**Waters**	Chemical analysis	Documented in-house methods based on Standard Methods for the Examination of Water& Wastewater 21 st Edition APHA (See Note 1)
.05	Trade Wastes *Industrial effluents* *Urban Wastewater* *Municipal Wastewater*	Biochemical Oxygen Demand 2 - 145,000 mg/l	CP No. 1 Membrane electrode
		pH 2 - 12	CP No. 5 Electrometry
		Suspended Solids 0.5 - 17,500 mg/l	CP No. 3 Gravimetric
		Chemical Oxygen Demand 21 - 135 mg/l 120 - 670,000 mg/l	CP No. 6 Reflux - colourmetric method
		Total phosphorus 0.2 - 5,300 mg/l	US-EPA Approved method/HACH Method CP No.20
		Ammonia 0.1 - 1,000 mg/l NH3-N	Documented in-house method CP22 by Konelab based on Method for the Examination of Waters and Associated Material HMSO: 1981.

Notes
1. APHA American Public Health Association, USA, 21st Edition

Scope of Accreditation

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO.016T

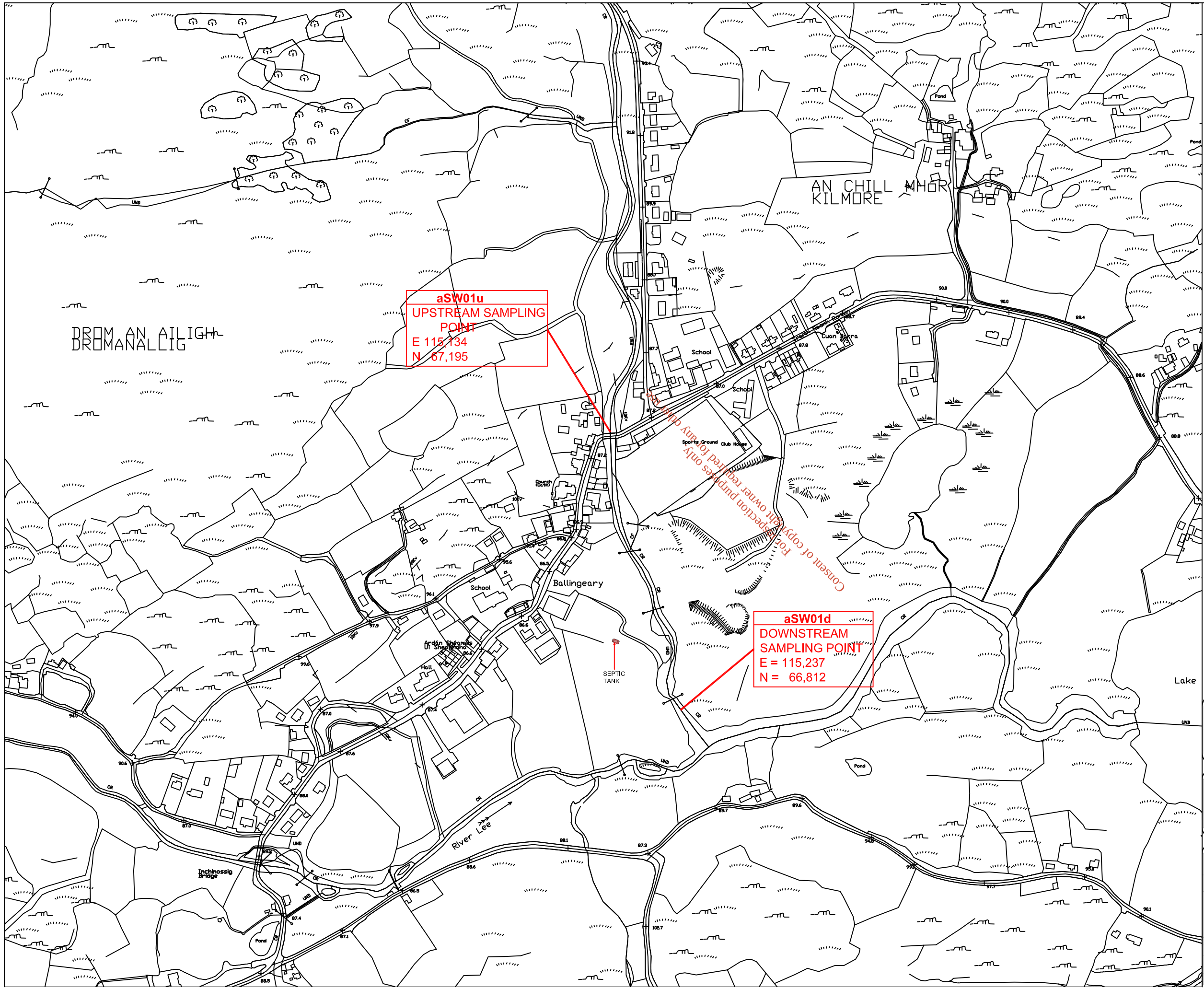
Cork County Council

Permanent Laboratory:
Category A

Chemical Testing Laboratory

INAB Classification number (P9) Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters .05 Trade Wastes *Industrial effluents* *Urban Wastewater* *Municipal Wastewater*	Chemical analysis	Documented in-house methods based on Standard Methods for the Examination of Water& Wastewater 21 st Edition APHA (See Note 1) CP No. 1 Membrane electrode
	Orthophosphate as P (Konelab) Range: 0.005 - 1.00 mg O-PO4 P/L High Range: 1000 mg O-PO4 P/L Method Detection Limit: 0.02 mg O-PO4 P/L	CP No. 23 Ascorbic Acid Method
	Chloride (Konelab) Range: 25-250 mg/L Cl- High Range Conc.: 86,600 mg /L Cl- Method Detection Limit: 25mg / L Cl-	CP No. 24 Ferricyanide Method
	Sulphate (Konelab)) Range: 30-250 mg/L SO4 /L High Range Conc.: 35,000 mg/L SO4 /L Method Detection Limit: 30 mg SO4 /L	CP No. 25 Documented in-house method by Konelab based on method for the examination of waters and waste waters and associated material HMSO: 1981

Notes
1. APHA American Public Health Association, USA, 21st Edition



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Rev.	Date	By	Description

CORK COUNTY COUNCIL
SOUTHERN DIVISION

Noel O Keeffe, B.E. C.Eng. Eur.Ing F.I.E.I.MICE
County Engineer
County Hall, Cork.

Patricia Power,
Director of Services,
Area Operations South

Project: BALLINGEARY WWTP
WASTE WATER
DISCHARGE LICENCE APPLICATION

Title: Application Form
Attachment E2_Map12
Location of Upstream & Downstream Monitoring Points

Designed: ER	Checked: MH	Scales: 1:5,000 @ A3	Drawing No: E2_Map12
Drawn: MM	Approved: MH	Date: May '09	
File Path:		Status: _	Rev: 0

Attachment E4 Ballingeary Inlet Table E4		
Sample Date	14/05/2009	
Sample	Influent	**Average**
Sample Code	GT656	
Flow M^3/Day	*	
pH	7.4	7.4
Temperature °C	*	*
Cond 20°C	655	655
SS mg/L	72	72
NH_3 mg/L	47.6	47.6
BOD mg/L	182	182
COD mg/L	362	362
TN mg/L	81.7	81.7
Nitrite mg/L	<0.10	<0.10
Nitrate mg/L	<0.50	<0.50
TP mg/L	7.34	7.34
O-PO4-P mg/L	5.12	5.12
SO4 mg/L	<30	<30
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane µg/L	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	not required	not required
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	<0.96
Chromium ug/L	<20	<20
Copper ug/L	50.3	50.3
Cyanide µg/L	<5	<5
Fluoride µg/L	<100	<100
Lead ug/L	<20	<20
Nickel ug/L	<20	<20
Zinc ug/L	85	85
Boron ug/L	<20	<20
Cadmium ug/L	<20	<20
Mercury µg/L	<0.2	<0.2
Selenium µg/L	1.3	1.3
Barium ug/L	<20	<20

Attachment E4 Ballingeary Discharge Outlet Table E4		
Sample Date	14/05/2009	
Sample	Effluent	**Average**
Sample Code	GT657	
Flow M^3/Day	*	
pH	6.4	6.4
Temperature °C	*	*
Cond 20°C	716	716
SS mg/L	147	147
NH_3 mg/L	50.1	50.1
BOD mg/L	320	320
COD mg/L	695	695
TN mg/L	89.2	89.2
Nitrite mg/L	<0.10	<0.10
Nitrate mg/L	<0.50	<0.50
TP mg/L	9.62	9.62
O-PO4-P mg/L	6.94	6.94
SO4 mg/L	32.7	32.7
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	not required	not required
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	<0.96
Chromium ug/L	<20	<20
Copper ug/L	62	62
Cyanide µg/L	5	5
Fluoride µg/L	<100	<100
Lead ug/L	<20	<20
Nickel ug/L	<20	<20
Zinc ug/L	97	97
Boron ug/L	<20	<20
Cadmium ug/L	<20	<20
Mercury µg/L	<0.2	<0.2
Selenium µg/L	<0.74	<0.74
Barium ug/L	42	42

Attachment E4 Ballingeary Upstream Table E4		
Sample Date	14/05/2009	
Sample	River	**Average**
Sample Code	GT659	
Flow M^3/Day	*	
pH	7.4	7.4
Temperature °C	*	*
Cond 20°C	91	91
SS mg/L	<2.5	<2.5
NH_3 mg/L	<0.1	<0.1
BOD mg/L	1	1
COD mg/L	<21	<21
TN mg/L	0.85	0.85
Nitrite mg/L	<0.10	<0.10
Nitrate mg/L	0.51	0.51
TP mg/L	<0.05	<0.05
O-PO4-P mg/L	<0.05	<0.05
SO4 mg/L	<30	<30
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	not required	not required
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	<0.96
Chromium ug/L	<20	<20
Copper ug/L	<20	<20
Cyanide µg/L	<5	<5
Fluoride µg/L	<100	<100
Lead ug/L	<20	<20
Nickel ug/L	<20	<20
Zinc ug/L	<20	<20
Boron ug/L	<20	<20
Cadmium ug/L	<20	<20
Mercury µg/L	<0.2	<0.2
Selenium µg/L	<0.74	<0.74
Barium ug/L		

Attachment E4 Ballingeary Downstream Table E4		
Sample Date	14/05/2009	
Sample	River	River
Sample Code	GT658	
Flow M^3/Day	*	
pH	7.4	7.4
Temperature °C	*	*
Cond 20°C	91	91
SS mg/L	<2.5	<2.5
NH_3 mg/L	0.1	0.1
BOD mg/L	1	1
COD mg/L	<21	<21
TN mg/L	0.92	0.92
Nitrite mg/L	<0.10	<0.10
Nitrate mg/L	0.51	0.51
TP mg/L	0.052	0.052
O-PO4-P mg/L	<0.05	<0.05
SO4 mg/L	<30	<30
Phenols µg/L	<0.10	<0.10
Atrazine µg/L	<0.01	<0.01
Dichloromethane	<1	<1
Simazine µg/L	<0.01	<0.01
Toluene µg/L	<0.28	<0.28
Tributyltin µg/L	not required	not required
Xylenes µg/L	<1	<1
Arsenic µg/L	<0.96	<0.96
Chromium ug/L	<20	<20
Copper ug/L	<20	<20
Cyanide µg/L	5	5
Fluoride µg/L	<100	<100
Lead ug/L	<20	<20
Nickel ug/L	<20	<20
Zinc ug/L	<20	<20
Boron ug/L	<20	<20
Cadmium ug/L	<20	<20
Mercury µg/L	<0.2	<0.2
Selenium µg/L	1.1	1.1
Barium ug/L	57.62	57.62

SITE SYNOPSIS

SITE NAME: THE GEARAGH

SITE CODE: 000108

This site is located on the River Lee in County Cork, extending westwards and southwards from the Lee Bridge, which is about 1.5km south of Macroom. It extends for about 7km of river, to Dromcarra Bridge. The Gearagh occupies a wide, flat valley of the River Lee, on a bed of limestone overlain with sand and gravel. The adjacent valley walls are of Old Red Sandstone.

This unusual area has formed where the River Lee breaks into a complex network of channels (2 to 6m wide) weaving through a series of wooded islands. The alluvial woodland which remains today at the Gearagh is of unique scientific interest, and qualifies as a priority habitat under Annex I of the European Habitats Directive. The area has probably been wooded throughout the Post-glacial era (i.e. since the end of the last Ice Age, which ended around 10,000 years ago) and frequent flooding has served to enhance its character. Originally, this area of alluvial woodland extended as far as the Lee Bridge. Unfortunately, in 1954/55, in the eastern part of the Gearagh, extensive tree-felling and flooding were carried out to facilitate the operation of a hydro-electric scheme. Around sixty per cent of the former woodland was lost. Today, the reservoir covers the area from Lee Bridge to Annahala Bridge and westwards of Illaunmore Island.

The islands in the Gearagh consist of rather dry alluvium, and support an almost closed canopy of Pedunculate Oak (*Quercus robur*), Ash (*Fraxinus excelsior*) and Birch (*Betula* spp.). The understorey is of Hazel (*Corylus avellana*), Holly (*Ilex aquifolium*) and Hawthorn (*Crataegus monogyna*). Willows (*Salix* spp.) and Alder (*Alnus glutinosa*) are largely confined to channel margins and waterlogged areas. The ground flora reflects the damp nature of the woodland. In spring, Ramsons (*Allium ursinum*) and Wood Anemone (*Anemone nemorosa*) are abundant. Later in the year, other species appear, including Bugle (*Ajuga reptans*), Pignut (*Conopodium majus*), Irish Spurge (*Euphorbia hyberna*), Tufted Hairgrass *(Deschampsia cespitosa*), Enchanter's Nightshade (*Circaea lutetiana*) and Meadowsweet (*Filipendula ulmaria*). Plants species of particular interest within the woodland are Wood Club-rush (*Scirpus sylvaticus*), Bird Cherry (*Prunus padus*) and Buckthorn (*Rhanmus catharticus*). These species are scarce in Ireland. The epiphytic bryophyte flora is well developed, as are some lichen communities. Variations in this vegetation occur locally, where drainage is impeded and where tree clearance has occurred. The whole area has a remarkably wild character, with many fallen trees blocking the channels, so that access both by foot and boat is difficult.

Within the reservoir, the former extent of the woodland can still be seen at times of low water: the cut stumps of larger trees remain prominently preserved in place. At least five species of Pondweed (*Potamogeton* spp.) occur in the reservoir, including two species which are uncommon in Ireland (*Potamogeton praelongus* and *P. gramineus*). At low water levels, a diverse ephemeral flora develops on the exposed mud. Species here include Water Purslane (*Lythrum portula*), Knotgrasses

(*Polygonum* spp.), Trifid Bur-marigold (*Bidens tripartita*), Marsh Yellow-cress (*Rorippa palustris*) and Six-stamened Waterwort (*Elatine hexandra*).

An oakwood occurs just north of Toon Bridge. Although wooded from ancient times, today the area supports relatively young oaks (*Quercus* sp.) on a southerly slope. Apart from oaks, Silver Birch (*Betula pendula*), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*) and Rowan (*Sorbus aucuparia*) are also present. The ground flora is typical of that found in an oakwood, but is relatively species-rich, partly as a result of water seepage downslope. Species present include: Bilberry (*Vaccinium myrtillus*), Great Wood-rush (*Luzula sylvatica*), Hard Fern (*Blechnum spicant*), Buckler Fern (*Dryopteris aemula*), Woodruff (*Galium odoratum*), Wood Melic (*Melica uniflora*), Hairy Wood-rush (*Luzula pilosa*) and Early Purple Orchid (*Orchis mascula*).

Along the Gearagh, the river channels grade into marginal alluvial grassland in places. These grasslands, as well as some semi-improved grasslands within the site, are grazed by wildfowl. An area of cutaway bog and some Gorse (*Ulex* sp.) scrub also occur in the site. Extensive swards of Mudwort (*Limosella aquatica*), a Rare plant listed in the Red Data Book, occur on the mudflats along the reservoir. Otter, an Annex II species on the European Habitats Directive, is frequent throughout the site.

The Gearagh supports part of an important wintering bird population: the area most utilised by birds extends also east of the site, towards Cork city (Carrigadroighid). At the Gearagh, Whooper Swans are regular (40-110, 1990's), as are Wigeon (640, average max.1992-1994), Teal (707, average max. 1992-94), Mallard (250 in January 1993) and Tufted Duck (154, average max. 1992-94). Golden Plover utilise the site on occasions (e.g. 2,000 in January 1994), while there is a regular flock of Dunlin (100-200, 1990s) a species unusual at inland sites. A late summering flock of Mute Swan is regular , with numbers between 120 and 250 from 1992 to 1994. Great Crested Grebe and Tufted Duck breed in small numbers, while there is a feral flock of about 50 Greylag Geese.

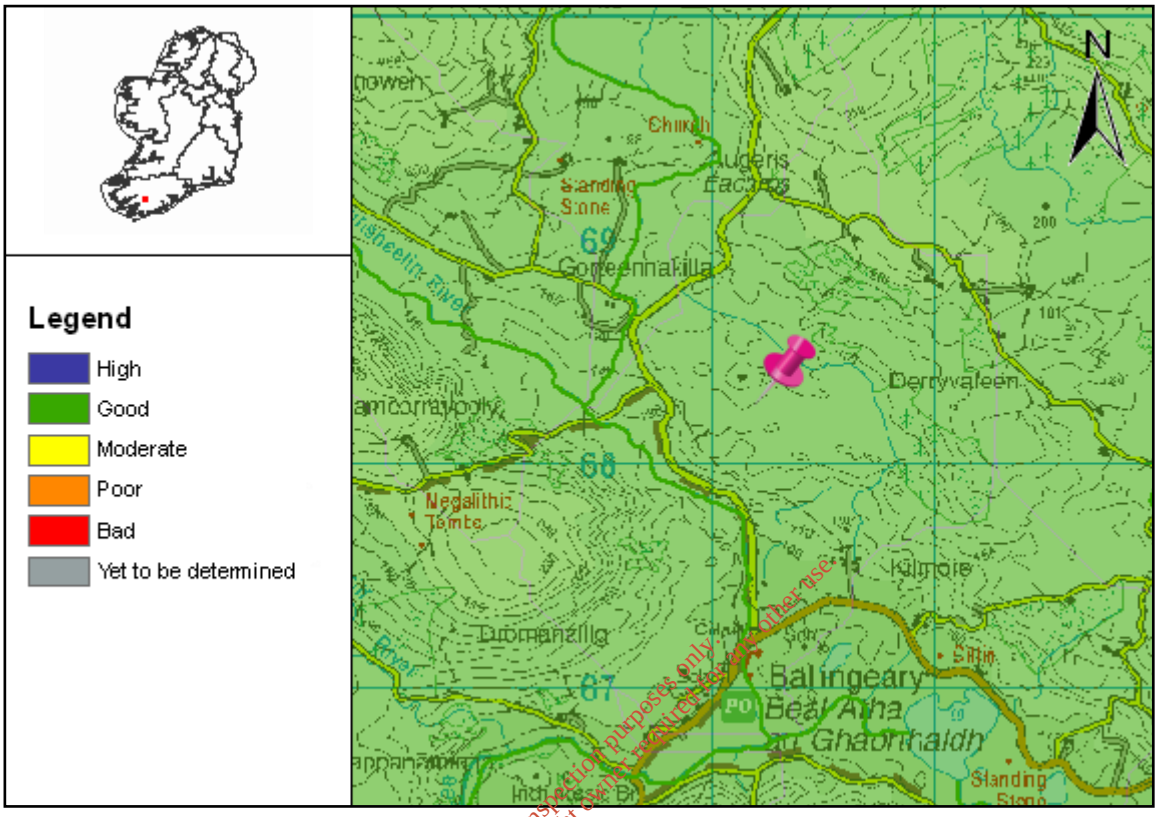
The wooded part of the Gearagh is largely undisturbed due to the inaccessible nature of the terrain. Cattle graze in some areas, but the impacts of this are very localised. In the past, coppicing was practiced over most of the area. Little felling has occurred since the early 1950's, and the installation of the hydro-electric scheme. The least disturbed part of woodland occurs in the upper reaches of the Gearagh. Tree regeneration is occurring around the reservoir, which may restore some of the lost portion of woodland.

Despite the fact that about half the original area has been destroyed the Gearagh still represents the only extensive alluvial woodland in Ireland or Britain, or indeed Western Europe west of the Rhine. For this reason it is a unique site and has been designated as a Statutory Nature Reserve. The international importance of the site is recognised by its designation both as a Ramsar site and as a Biogenetic Reserve. The reservoir is also a Wildfowl Sanctuary.

9.1.1997

water matters
"Help us plan!"

Full Report for Waterbody BunSheelin, Trib of Lee



Date Reported to Europe: 22/12/2008

Date Report Created 02/06/2009

water matters
"Help us plan!"

Summary Information:

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	BunSheelin, Trib of Lee
WaterBody Code:	IE_SW_19_927
Overall Status:	Good
Overall Objective:	Protect
Overall Risk:	1a At Risk
Applicable Supplementary Measures:	Unsewered; Urban & Industrial; Morphology; Forestry;
	Report data based upon Draft RBMP, 22/12/2008.

south western river basin district

Date Reported to Europe: 22/12/2008

Date Report Created 02/06/2009

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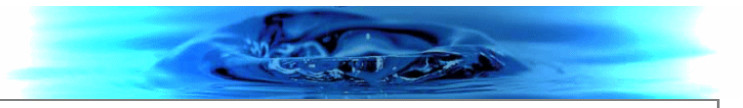

Status Report

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	BunSheelin, Trib of Lee
WaterBody Code:	IE_SW_19_927
Overall Status Result:	Good

south western river basin district

	Status Element Description	Result
EX	Status from Monitored or Extrapolated Waterbody	SW_19_1420
	Biological Elements	
Q	Macroinvertebrates (Q-Value)	n/a
F	Fish	n/a
DI	Phytobenthos (Diatoms)	n/a
FPM	Status value as determined by Margartifera	n/a
	Supporting Elements	
MOR	Hydromorphology	n/a
SP	Specific Pollutants	n/a
PC	General Physico-Chemical	n/a
	Chemical Status	
PAS	Chemical Status	n/a
	Overall Ecological Status	
O	Overall Ecological Status	Good

Date Reported to Europe: 22/12/2008

Date Report Created 02/06/2009

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Risk Report

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	BunSheelin, Trib of Lee
WaterBody Code:	IE_SW_19_927
Overall Risk Result:	1a At Risk

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	Risk Test Description	Risk
	Point Risk Sources	
RP1	WWTPs (2008)	1a At Risk
RP2	CSOs	2b Not At Risk
RP3	IPPCs (2008)	2b Not At Risk
RP4	Section 4s (2008)	2b Not At Risk
RPO	Overall Risk from Point Sources - Worst Case (2008)	1a At Risk
	Diffuse Risk Sources	
RD1	EPA diffuse model (2008)	2b Not At Risk
RD2a	Road Wash - Soluble Copper	2b Not At Risk
RD2b	Road Wash - Total Zinc	2b Not At Risk
RD2c	Road Wash - Total Hydrocarbons	2b Not At Risk
RD3	Railways	2b Not At Risk
RD4a	Forestry - Acidification (2008)	2b Not At Risk
RD4b	Forestry - Suspended Solids (2008)	2b Not At Risk
RD4c	Forestry - Eutrophication (2008)	2a Probably Not At Risk
RD5a	Unsewered Areas - Pathogens (2008)	2a Probably Not At Risk
RD5b	Unsewered Phosphorus (2008)	2b Not At Risk
RD5	Overall Unsewered (2008)	2b Not At Risk
RD6a	Arable	2b Not At Risk
RD6b	Sheep Dip	2b Not At Risk
RD6c	Forestry - Dangerous Substances	2b Not At Risk
RDO	Diffuse Overall -Worst Case (2008)	2a Probably Not At Risk

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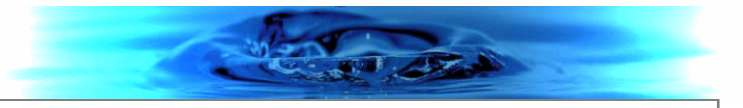

	Morphological Risk Sources	
RM1	Channelisation (2008)	2b Not At Risk
RM2	Embankments (2008)	2b Not At Risk
RM3	Impoundments	2b Not At Risk
RM4	Water Regulation	2b Not At Risk
RMO	Morphology Overall - Worst Case (2008)	2b Not At Risk
	Q/RDI or Point/Diffuse	
QPD	Q class/EPA Diffuse Model or worst case of Point and Diffuse (2008)	1a At Risk
	Hydrology	
RHY1	Water balance - Abstraction	2b Not At Risk
	Overall Risk	
RA	Rivers Overall - Worst Case (2008)	1a At Risk

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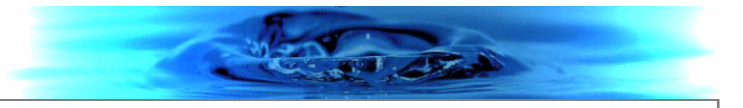

Objectives Report

WaterBody Category:	Subbasin Waterbody
WaterBody Name:	BunSheelin, Trib of Lee
WaterBody Code:	IE_SW_19_927
Overall Objective:	Protect

south western river basin district

	Objectives Description	Result
	Objectives	
OB1	Objective 1 - Protected Areas	Protect
OB2	Objective 2 - Protect High and Good Status	Not Applicable
OB3	Objective 3 - Restore Less Than Good Status	Not Applicable
OB4	Objective 4 - Reduce Chemical Pollution	Not Applicable
OBO	Overall Objective	Protect
	Deadline	
YR	Default Year by which the objective must be met	2015
EX	Revised Objective Deadline	2007
OBO	Overall Objective and Deadline	Protect

Date Reported to Europe: 22/12/2008

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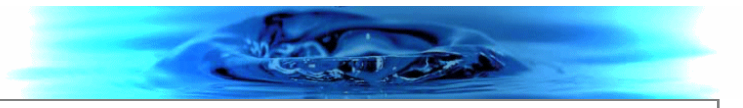

Basic Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: BunSheelin, Trib of Lee

WaterBody Code: IE_SW_19_927

south western river basin district

	Basic Measures Description	Applicable
	Key Directives	
BA	Bathing Waters Directive	No
BI	Birds Directive	No
HA	Habitats Directive	No
DW	Drinking Waters Directive	Yes
SEV	Major Accidents and Emergencies (Seveso) Directive	Yes
EIA	Environmental Impact Assessment Directive	Yes
SE	Sewage Sludge Directive	Yes
UW	Urban Waste Water Treatment Directive	No
PL	Plant Protection Products Directive	Yes
NI	Nitrates Directive	Yes
IP	Integrated Pollution Prevention Control Directive	Yes
	Other Stipulated Measures	
CR	Cost recovery for water use	Yes
SU	Promotion of efficient and sustainable water use	Yes
DWS	Protection of drinking water sources	Yes
AB	Control of abstraction and impoundments	Yes
PT	Control of point source discharges	Yes
DI	Control of diffuse source discharges	Yes
GWD	Authorisation of discharges to groundwater	No
PS	Control of priority substances	Yes
MOR	Control of physical modifications to surface waters	Yes
OA	Controls on other activities impacting on water status	Yes
AP	Prevention or reduction of the impact of accidental pollution incidents	Yes

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Urban and Industrial Discharges Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: BunSheelin, Trib of Lee

WaterBody Code: IE_SW_19_927

south western river basin district

	Point discharges to waters from municipal and industrial sources	Result
PINDDIS	Is there one or more industrial discharge (Section 4 licence issued by the local authority or IPPC licence issued by the EPA) contained within the water body?	No
PINDDISR	Are there industrial discharges (Section 4 licence issued by the local authority or IPPC licence issued by the EPA) that cause the receiving water to be 'At Risk' within the water body?	No
PB1	Basic Measure 1 - Measures for improved management.	Yes
PB2	Basic Measure 2 - Optimise the performance of the waste water treatment plant by the implementation of a performance management system.	Yes
PB3	Basic Measure 3 - Revise existing Section 4 license conditions and reduce allowable pollution load.	Yes
PB4	Basic Measure 4 - Review existing IPPC license conditions and reduce allowable pollution load.	Yes
PB5	Basic Measure 5 - Investigate contributions to the collection system from unlicensed discharges.	Yes
PB6	Basic Measure 6 - Investigate contributions to the collection system of specific substances known to impact ecological status.	Yes
PB7	Basic Measure 7 - Upgrade WWTP to increase capacity.	Yes
PB8	Basic Measure 8 - Upgrade WWTP to provide nutrient removal treatment.	No
PS1	Supplementary Measure 1 - Measures intended to reduce loading to the treatment plant.	No
PS2	Supplementary Measure 2 - Impose development controls where there is, or is likely to be in the future, insufficient capacity at treatment plants.	No
PS3	Supplementary Measure 3 - Initiate investigations into characteristics of treated wastewater for parameters not presently required to be monitored under the urban wastewater treatment directive.	No
PS4	Supplementary Measure 4 - Initiate research to verify risk assessment results and determine the impact of the discharge.	No
PS5	Supplementary Measure 5 - Use decision making tools in point source discharge management.	No
PS6	Supplementary Measure 6 - Install secondary treatment at plants where this level of treatment is not required under the urban wastewater treatment directive.	No
PS7	Supplementary Measure 7 - Apply a higher standard of treatment (stricter emission controls) where necessary.	No

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PS8	Supplementary Measure 8 - Upgrade the plant to remove specific substances known to impact on water quality status.	No
PS9	Supplementary Measure 9 - Install ultra-violet or similar type treatment.	No
PS10	Supplementary Measure 10 - Relocate the point of discharge.	No

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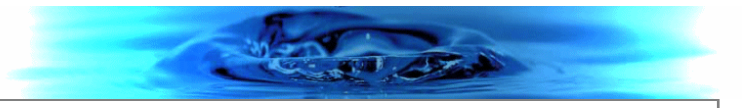

Physical Modifications Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: BunSheelin, Trib of Lee

WaterBody Code: IE_SW_19_927

south western river basin district

	Physical Modifications Supplementary Measures	Applicable
	Reduce	
SM1	Codes of Practice	Yes
SM2	Support for voluntary initiatives	Yes
	Remediate	
SM3	Channelisation impact remediation schemes	No
SM4	Channelisation investigation	No
SM5	Overgrazing remediation	No
SM6	Impassable barriers, impact confirmed, investigation into feasibility of remediation required	No
SM7	Impassable barriers investigation	Yes

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Unsewered Properties Supplementary Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: BunSheelin, Trib of Lee

WaterBody Code: IE_SW_19_927

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	Supplementary Measures for **Unsewered Properties**	Applicable
SP1	Amend building regulations	Yes
SP2	Establish certified expert panels for site investigation and certification of installed systems	Yes
SP3	Assess applications for new unsewered systems by applying risk mapping/decision support systems and codes of practice	Yes
SP4	Carry out an inspection programme in prioritised locations for existing systems and record results in an action tracking system	No
SP5	Enforce requirements for percolation	No
SP6	Enforce requirements for de-sludging	Yes
SP7	Consider connection to municipal systems	No

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Forestry Measures Report

WaterBody Category: Subbasin Waterbody

WaterBody Name: BunSheelin, Trib of Lee

WaterBody Code: IE_SW_19_927

south western river basin district

	Forestry Measures for Forestry	Applicable
SF1	Management Instruments - Ensure regulations and guidance are cross referenced and revised to incorporate proposed measures	No
SF2	Acidification - Avoid or limit afforestation on 1st and 2nd order stream catchments in acid sensitive areas	No
SF3	Acidification - Revise the Acidification Protocol to ensure actual minimum alkalinities are detected and revise boundary conditions for afforestation in acid sensitive areas	No
SF10	Pesticide Use - Pre-dip trees in nurseries prior to planting out	No
SF11	Pesticide Use - Maintain registers of pesticide use	No
SF12	Acidification - Restructure existing forests to include open space and structural diversity through age classes and species mix, including broadleaves	No
SF13	Acidification - Mitigate acid impacts symptomatically using basic material	No
SF14	Acidification - Manage catchment drainage to increase residence times and soil wetting	No
SF15	Acidification - Implement measures to increase stream production.	No
SF16	Eutrophication - Establish riparian zone management prior to clearfelling	No
SF17	Eutrophication and Sedimentation - Enhance sediment control	No
SF18	Eutrophication - Manage catchment drainage to increase residence times and soil wetting, including no drainage in some locations	No
SF19	Sedimentation - Establish riparian zone management prior to clearfelling	No
SF20	Sedimentation - Enhance sediment control	No
SF21	Sedimentation - Manage catchment drainage to increase residence times and soil wetting, including no drainage in some locations	No
SF22	Hydromorphology - Enhance drainage network management, minimise drainage in peat soils	No
SF23	Pesticide Use - Develop biological control methods	No

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SF4	Eutrophication and Sedimentation - Avoid or limit forest cover on peat sites	No
SF5	Eutrophication and Sedimentation - Change the tree species mix on replanting	No
SF6	Eutrophication and Sedimentation - Limiting felling coup size	No
SF7	Eutrophication and Sedimentation - Establish new forest structures on older plantation sites	No
SF8	Hydromorphology - Audit existing drainage networks in forest catchments	No
SF9	Pesticide Use - Reduce pesticide usage	No

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Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Ballingeary
Population Equivalent	715
Level of Treatment	Primary
Treatment plant address	Dromanallig, Ballingeary, Co. Cork
Grid Ref (12 digits, 6E, 6N)	115181 / 066906
EPA Reference No:	

Contact details

Contact Name:	Patricia Power
Contact Address:	Water Services Section Cork County Council Southern Division Carrigrohane Road Cork
Contact Number:	021-4276891
Contact Fax:	021 4276321
Contact Email:	patricia.power@corkcoco.ie

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

Discharge Point Code: SW-1

Local Authority Ref No:	SW01BLNGY	
Source of Emission:	Primary Discharge	
Location:	Dromanallig, Ballingeary	
Grid Ref (12 digits, 6E, 6N)	115239 / 066876	
Name of Receiving waters:	Bunsheelin	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	None	
Flow Rate in Receiving Waters:	0	$m^3.sec^{-1}$ Dry Weather Flow
	0.45	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The volumes entered are for the proposed upgrade to the treatment plant as the system does not allow for the entry of the quantities from the current treatment plant. The quantity of waste water discharged per annum is based on the dry weather flow.	

Emission Details:

(i) Volume emitted			
Normal/day	292.5 m^3	Maximum/day	877.5 m^3
Maximum rate/hour	36.56 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.003 m^3/sec		

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

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	Grab	= 9	
Temperature	°C	Grab	= 25	
Electrical Conductivity (@ 25°C)	µS/cm	Grab	= 720	
Suspended Solids	mg/l	Grab	= 250	219.38
Ammonia (as N)	mg/l	Grab	= 0	0
Biochemical Oxygen Demand	mg/l	Grab	= 320	280.8
Chemical Oxygen Demand	mg/l	Grab	= 695	609.86
Total Nitrogen (as N)	mg/l	Grab	= 75	65.81
Nitrite (as N)	mg/l	Grab	= 0	0
Nitrate (as N)	mg/l	Grab	= 0	0
Total Phosphorous (as P)	mg/l	Grab	= 12	10.53
OrthoPhosphate (as P)	mg/l	Grab	= 10	8.775
Sulphate (SO_4)	mg/l	Grab	= 0	0
Phenols (Sum)	µg/l	Grab	= 0	0

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

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

Discharge Point Code: SW-1

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

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

Table D.1(iii)(a): EMISSIONS TO SURFACE/GROUND WATERS (Storm Overflow)

Discharge Point Code: SW-2

Local Authority Ref No:	SW02BLNGY	
Source of Emission:	Storm Water Overflow	
Location:	Dromanallig, Ballingeary	
Grid Ref (12 digits, 6E, 6N)	115145 / 066920	
Name of Receiving waters:	Bunsheelin River	
Water Body:	River Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	None	
Flow Rate in Receiving Waters:	0	$m^3.sec^{-1}$ Dry Weather Flow
	0.45	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The volume of discharge is not available.	

Emission Details:

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

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

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)
SW-1	365	106762.5

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

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)	Complies with Definition of Storm Water Overflow
SW-2			No

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	115237 / 066812

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	14/05/09					
pH		= 7.4			Grab	2	Electrochemical
Temperature	= 0				Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)		= 91			Grab	0.5	Electrochemical
Suspended Solids		< 2.5			Grab	0.5	Gravimetric
Ammonia (as N)		= 0.1			Grab	0.02	Colorimetric
Biochemical Oxygen Demand		= 1			Grab	0.06	Electrochemical
Chemical Oxygen Demand		< 21			Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as $CaCO_3$)	= 0				Grab	0	TITRIMETRIC
Total Nitrogen (as N)		= 0.92			Grab	0.5	Digestion & Colorimetric
Nitrite (as N)		< 0.1			Grab	0.013	Colorimetric
Nitrate (as N)		= 0.51			Grab	0.04	Colorimetric
Total Phosphorous (as P)		= 0.052			Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		< 0.05			Grab	0.02	Colorimetric
Sulphate (SO_4)		< 30			Grab	30	Turbidimetric
Phenols (Sum)		< 0.1			Grab	1	GC-MS2

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

Additional Comments:	default setting of 0 and 01/01/09 where analysis was not performed

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1d
Grid Ref (12 digits, 6E, 6N)	115237 / 066812

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	14/05/09					
Atrazine		< 0.01			Grab	0.96	HPLC
Dichloromethane		< 1			Grab	1	GC-MS1
Simazine		< 0.01			Grab	0.01	HPLC
Toluene		< 0.28			Grab	0.02	GC-MS1
Tributyltin	= 0				Grab	0.02	GC-MS1
Xylenes		< 1			Grab	1	GC-MS1
Arsenic		< 0.96			Grab	0.96	ICP-MS
Chromium		< 20			Grab	20	ICP-OES
Copper		< 20			Grab	20	ICP-OES
Cyanide		= 5			Grab	5	Colorimetric
Flouride		< 100			Grab	100	ISE
Lead		< 20			Grab	20	ICP-OES
Nickel		< 20			Grab	20	ICP-OES
Zinc		< 20			Grab	20	ICP-OES
Boron		< 20			Grab	20	ICP-OES
Cadmium		< 20			Grab	20	ICP-OES
Mercury		< 0.2			Grab	0.2	ICP-MS
Selenium		= 1.1			Grab	0.74	ICP-MS
Barium		= 57.62			Grab	20	ICP-OES

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

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	115134 / 067195

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	14/05/09					
pH		= 7.4			Grab	2	Electrochemical
Temperature	= 0				Grab	0	Electrochemical
Electrical Conductivity (@ 25°C)		= 91			Grab	0.5	Electrochemical
Suspended Solids		< 2.5			Grab	0.5	Gravimetric
Ammonia (as N)		< 0.1			Grab	0.02	Colorimetric
Biochemical Oxygen Demand		= 1			Grab	0.06	Electrochemical
Chemical Oxygen Demand		< 21			Grab	8	Digestion & Colorimetric
Dissolved Oxygen	= 0				Grab	0	ISE
Hardness (as $CaCO_3$)	= 0				Grab	0	TITRIMETRIC
Total Nitrogen (as N)		= 0.85			Grab	0.5	Digestion & Colorimetric
Nitrite (as N)		< 0.1			Grab	0.013	Colorimetric
Nitrate (as N)		= 0.51			Grab	0.04	Colorimetric
Total Phosphorous (as P)		< 0.05			Grab	0.2	Digestion & Colorimetric
OrthoPhosphate (as P)		< 0.05			Grab	0.02	Colorimetric
Sulphate (SO_4)		< 30			Grab	30	Turbidimetric
Phenols (Sum)		< 0.1			Grab	0.1	GC-MS2

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

Additional Comments:	default setting of 01/01/09 and 0 where no results are available

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

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1u
Grid Ref (12 digits, 6E, 6N)	115134 / 067195

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	14/05/09					
Atrazine		< 0.01			Grab	0.96	HPLC
Dichloromethane		< 1			Grab	1	GC-MS1
Simazine		< 0.01			Grab	0.01	HPLC
Toluene		< 0.28			Grab	0.02	GC-MS1
Tributyltin	= 0				Grab	0.02	GC-MS1
Xylenes		< 1			Grab	1	GC-MS1
Arsenic		< 0.96			Grab	0.96	ICP-MS
Chromium		< 20			Grab	20	ICP-OES
Copper		< 20			Grab	20	ICP-OES
Cyanide		< 5			Grab	5	Colorimetric
Flouride		< 100			Grab	100	ISE
Lead		< 20			Grab	20	ICP-OES
Nickel		< 20			Grab	20	ICP-OES
Zinc		< 20			Grab	20	ICP-OES
Boron		< 20			Grab	20	ICP-OES
Cadmium		< 20			Grab	20	ICP-OES
Mercury		< 0.2			Grab	0.2	ICP-MS
Selenium		< 0.74			Grab	0.74	ICP-MS
Barium	= 0				Grab	20	ICP-OES

Additional Comments:	TBT value is 0.02ug/l as Sn TBT testing not required,barium result to follow

Annex 2: Check List For Regulation 16 Compliance

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

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

Regulation 16(1) **In the case of an application for a waste water discharge licence, the application shall -**		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	B1	Yes
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,	Not applicable	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the waste water treatment plant and/or the waste water discharge point or points to which the application relates,	B2	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	B9	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	C, D	Yes
(f)	give details of the receiving water body, including its protected area status, if any, and details of any sensitive areas or protected areas or both in the vicinity of the discharge point or points likely to be affected by the discharge concerned, and for discharges to ground provide details of groundwater protection schemes in place for the receiving water body and all associated hydrogeological and geological assessments related to the receiving water environment in the vicinity of the discharge.	D2, F	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	E3	Yes
(h)	in the case of an existing waste water treatment plant, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	E4	Yes
(i)	describe the existing or proposed measures, including emergency procedures, to prevent unintended waste water discharges and to minimise the impact on the environment of any such discharges,	G3	Yes
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	Not applicable	Yes
(k)	give details, and an assessment of the effects, of any existing or proposed emissions on the environment, including any environmental medium other than those into which the emissions are, or are to be made, and of proposed measures to prevent or eliminate or, where that is not practicable, to limit any pollution caused in such discharges,	F1	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	G	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	G3	Yes
(n)	Any other information as may be stipulated by the Agency.	Not applicable	Yes
Regulation 16(3) **Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -**		**Attachment Number**	**Checked by Applicant**
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	B8	Yes
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	Not applicable	Yes
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -	B, D, E	Yes
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	B3, B5	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	E3	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	B9(ii)	Yes

Regulation 16(4) An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		Attachment Number	Checked by Applicant
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agancy.		
Regulation 16(5) **For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.**		**Attachment Number**	**Checked by Applicant**
1	Signed original.		
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		
3	1 CD of geo-referenced digital files provided.		
Regulation 17 **Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency**		**Attachment Number**	**Checked by Applicant**
1	EIA provided if applicable		
2	2 hardcopies of EIS provided if applicable.		
3	2 CD versions of EIS, as PDF files, provided.		
Regulation 24 **In the case of an application for a waste water discharge certificate of authorisation, the application shall –**		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant and the address to which correspondence relating to the application should be sent and, if the operator of the waste water works is a body corporate, the address of its registered office or principal office		
(b)	give the name of the water services authority in whose functional area the relevant waste water discharge takes place or is to take place, if different from that of the applicant,		
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the discharge point or points to which the application relates,		
(d)	state the population equivalent of the agglomeration to which the application relates,		
(e)	in the case of an application for the review of a certificate, specify the reference number given to the relevant certificate in the register,		
(f)	specify the content and extent of the waste water discharge, the level of treatment provided and the flow and type of discharge,		
(g)	give details of the receiving water body, its protected area status, if any, and details of any sensitive areas or protected areas, or both, in the vicinity of the discharge point or points or likely to be affected by the discharge concerned,		
(h)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and of the likely environmental consequences of any such discharges,		
(i)	in the case of an existing discharge, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,		
(j)	describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected waste water discharges and to minimise the impact on the environment of any such discharges,		
(k)	give particulars of the location of the nearest downstream drinking water abstraction point or points to the discharge point or points associated with the waste water works,		
(l)	give details of any designation under any Council Directive or Regulations that apply in relation to the receiving waters,		
(m)	give details of compliance with any applicable monitoring requirements and treatment standards,		
(n)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work,		
(o)	give any other information as may be stipulated by the Agency, and		
(p)	be accompanied by such fee as is appropriate having regard to the provisions of Regulations 38 and 39.		