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

Environmental Protection Agency Licencing
Received
22 JUN 2009
Initials _____

Our Ref.: MS/RING/0609

15<sup>th</sup> June 2009

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

Dear Sir/Madam,

Please find enclosed the waste water discharge license application for the agglomeration of Ringaskiddy Village.

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 Ringaskiddy Village, County Cork

Category of application: 500 PE to 1,000 PE

Date Application Lodged: June 22<sup>nd</sup> 2009

*wwd\_ringaskiddy application.doc*

Page 1 of 40



# Waste Water Discharge Licence Application Form

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<b>EPA Ref. N<sup>o</sup>:</b> <i>(Office use only)</i>	<input type="text"/>
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**Environmental Protection Agency**  
PO Box 3000, Johnstown Castle Estate, Co. Wexford  
Lo Call: 1890 335599 Telephone: 053-9160600 Fax: 053-9160699  
Web: [www.epa.ie](http://www.epa.ie) Email: [info@epa.ie](mailto: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 the 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 waste water treatment	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 the plant.



		plants, where available. Amend wording of Section E.1 to request information on composite sampling/flow monitoring provisions.	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.

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

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## ABOUT THIS APPLICATION FORM

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

The Application Form **must** be completed in accordance with the instructions and guidance provided in the *Waste Water Discharge Licensing Application Guidance Note*. The Guidance Note gives an overview of Waste Water Licensing, outlines the licence application process (including the number of copies required) and specifies the information to be submitted as part of the application. The Guidance Note and application form are available to download from the Licensing page of the EPA's website at [www.epa.ie](http://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. The abbreviation "N/A" should not be used.**

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

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

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

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

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

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

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

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## SECTION A: NON-TECHNICAL SUMMARY

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

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

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

A description of:

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

Supporting information should form **Attachment N<sup>o</sup> A.1**

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## Ringaskiddy Village Wastewater Discharge Licence Application.

### Section A Non Technical Summary

#### Description of Passage West – Monkstown Agglomeration and Collection System.

##### Name of Agglomeration

The agglomeration for which this application is sought is named 'Ringaskiddy Village'. The agglomeration is made up of the village of Ringaskiddy only. Ringaskiddy Village is a small community consisting of ribbon development along the only route to Haulbowline Island on the N28.

At present wastewater produced in the towns and villages in the Lower Harbour area is discharged in an untreated condition into Cork Harbour at numerous dispersed locations. While collection systems exist in Cobh, Passage West, Monkstown, Ringaskiddy, Shanbally, Carrigaline and Crosshaven, none of these systems provides complete wastewater treatment at present. There are plans in place to provide a wastewater treatment plant (WWTP) for the Lower Harbour area as part of the proposed Cork Lower Harbour Sewerage Scheme. However, the WWTP is not likely to be in place within the next 4 to 5 years. This application therefore relates only to the existing untreated discharges from the Ringaskiddy Village agglomeration.

The extent of the agglomeration for the Ringaskiddy Village area is shown on drawings 'Map 01' and 'Map 02' attached.

##### Discharge Points:

The collection system drains and discharges via the primary discharge point (SW01RINV). The point of discharge is highlighted on the attached drawing 'Map 02'. The co-ordinates of this discharge point are E178202, N064723.

##### Pumping Stations:

There are no submersible pumping stations within the agglomeration.

##### Sources of Emissions

Emissions from the Ringaskiddy Village agglomeration arise mainly from the local population i.e. domestic loading. Currently, waste water from the agglomeration is discharged directly into Cork Harbour between the West Passage and the West Channel without secondary treatment

The Department of Defence Naval Base on Haulbowline Island do not discharge into the agglomeration. They have a separate sewage system controlled under their Section 4 Water Pollution Licence. The Island Crematorium located on Rocky Island does not discharge to the agglomeration. It has a separate treatment plant licensed by Cork County Council. The National Maritime College has a treatment

plant on site. Treated effluent is pumped into the public sewer within the agglomeration. The Port of Cork – Deep Water Berth which provides a RO-RO facility connects to the public sewer within the agglomeration. In keeping with national legislation ships docked are not permitted to discharge to this sewer.

**The estimated Population Equivalent (PE) of the agglomeration is 797.**

The PE is based on the following;

From 2008 Geodirectory:	
Number of domestic properties occupied:	218
No of commercial with domestic properties:	4
Total domestic properties:	222

Assuming occupancy rate of 3 persons per property = 666 persons  
 Adding 10% for other commercial and institutional loadings = 733 PE.  
 Pending development: approximately 80 residential units plus maximum possible extension to college, results in a total estimated PE of 640.

As it is Cork County Council policy that any significant developments which would have the effect of increasing discharges to the Harbour area must provide secondary treatment before discharge to the public sewer, the PE of the treated discharge from pending development is estimated at 10% of the PE loading i.e. 64 PE

Therefore Total PE:  $733 + 64 = 797$  PE.  
 Equivalent BOD: 48kg BOD.

**The Nature and Quantities of Foreseeable Emissions**

As there are no areas zoned for industrial development in the Ringaskiddy Village area a growth in non domestic loading is not expected to be significant. In the short term [in the next 5 years] the PE of the agglomeration is not expected to increase above the PE of 797 applied for.

However, changes to the Ringaskiddy Village collection system proposed under the Cork Lower Harbour Sewerage Scheme will eliminate the existing discharge. It was initially proposed that any new pumping station located in Ringaskiddy Village would pump 6 times the Dry Weather Flow (6 DWF) forward to the proposed Waste Water Treatment Plant. However Cork County Council met with Mott McDonald Pettit Consulting Engineers on 3<sup>rd</sup> June, 2009, and it was agreed that remodelling work would be carried out to ensure that all storm water overflows comply with Department of Environment Heritage & Local Government (DoEHLG) 'Procedures and Criteria In Relation to Storm Water Overflows, 1995'.

**Environmental Impacts.**

McDonald Pettit, Consulting Engineers have prepared an Environmental Impact Statement (EIS) for the proposed wastewater treatment plant – a copy of which is included with this Wastewater Discharge Licence Application. Reference should be made to the EIS for a more detailed assessment of Environmental Impacts.

### **Receiving Waters – Cork Harbour**

The existing discharges from the Ringaskiddy Village agglomeration discharge to Cork Harbour at a point between the West Passage and the West Channel. This discharge is downstream of the outfall from the Cork City WWTP at Carrigrenan which has a PE load of 413,000. Cork Harbour is considered to be one of the largest natural harbours in the world. It consists of two main sections: the Upper Harbour including the Lee Estuary and Lough Mahon and the Lower Harbour which are connected by an east channel and west channel. The west channel is the larger of the two and the majority of the tidal exchange volume occurs through the west channel.

Within the Lower Harbour area there are a number of protected conservation areas namely, Cork Harbour Special Protection Area (SPA) and the Great Island Channel Special Area of conservation (SAC). A number of proposed Natural Heritage Areas pNHAs are also designated including: Monkstown Creek pNHA and Owenboy River pNHA. Refer to drawings 'Map 05', 'Map 06' & 'Map 07'.

According to the EPA, water quality in the Lower Harbour area is classed as 'intermediate' and water quality within Cork Harbour has exhibited an improvement over the last three years, due, in part, to the operation of Carrigrenan WWTP in 2005. Existing water quality data from the EPA indicate that there is no current negative impact on the transitional receiving waters as a result of the discharges from the agglomeration

### **Bathing Waters:**

There are no designated bathing waters within the confines of Cork Harbour. Drawing 'Map 03' attached is a location map showing the location of the nearest waters used by members of the public for bathing. Fountainstown beach, located outside the mouth of the harbour, is the closest designated bathing water at a distance of approximately 10km from the discharge points. Bathing Water quality Map of Ireland 2007, prepared by EPA indicates that Fountainstown is compliant with EU guidelines ('good quality').

### **Shellfish:**

There are no areas designated in Cork Harbour under the quality of Shellfish water Regulations 1994. Drawing 'Map 04' shows the location of proposed designated shellfish waters. Cork Lower Harbour is not designated as sensitive water under the *Quality of Shellfish Waters Regulations, 2006 (S.I. 268012006)*.

### **Proposed Technology and Other Techniques for Preventing or, Where This Is Not Possible, Reducing Emissions from the Waste Water Works.**

Cork County Council recognises the need for improvement to the existing sewerage system and facilities. In 2000, Cork County Council appointed Consulting Engineers E G Pettit & Company to prepare a Preliminary Report and Environmental Impact Statement (EIS) for the Cork Lower Harbour Area which would make recommendations concerning the collection and treatment of wastewater from the population centres of Cobh, Passage West, Monkstown, Carrigaline and Ringaskiddy.

The Preliminary report was completed in 2002 and updated in 2004 when an Addendum Report was prepared identifying the impacts of the 2002 Census and the 2003 Cork County Development Plan. The Preliminary report was again updated in 2008. The updated preliminary report, ***Cork Harbour Main Drainage Scheme Preliminary Report March 2008***, takes account of the 2006 Census and the 2005 Local Area Plans, extends the design horizon to 2030 and incorporates the 2004 Addendum within the body of the report.

The EIS has been submitted to an Bord Pleanála in 2008, and the Preliminary Report has been submitted to the Department of Environment, Heritage and Local Government (DOEHLG) for approval. Cork County Council are currently awaiting a decision, which is expected mid 2009.

A central part of the Cork Lower Harbour Sewerage Scheme is the proposal to provide a Wastewater Treatment Plant (WWTP) to treat all currently untreated wastewater arising in this agglomeration as well as wastewater from Ringaskiddy Village, Crosshaven, Carrigaline, Ringaskiddy Area and Cobh. The proposed WWTP is to be located in the Townland of Shanbally as shown on Drawing 'Map 01'. It is proposed to discharge the treated effluent through the existing long sea outfall pipe into Cork Lower Harbour (IDA outfall).

This will result in a reduction in the number of outfall points in Cork Harbour to a single outfall point and the discharge of treated effluent, as compared to the existing scenario where untreated effluent is discharged at multiple outfalls throughout the Lower Harbour area. As a result of the WWTP and upgraded collection system, water quality in Cork Lower Harbour is expected to improve within the Lower Harbour area.

The DOEHLG and Cork County Council 2007-2009 Water Services Investment Programme identifies Cork Lower Harbour Sewerage Scheme as one of the projects identified for investment during this period.

The treatment plant proposed will have a capacity of 80,000 population equivalent and can be expected to open with a load of approx. 50,000 PE which allows a margin of 30,000 PE for future growth. The WWTP is to be constructed on a design, build, operate basis and therefore no specifics regarding the detailed design of the development are available at this stage.

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

It is Cork County Council policy that any significant developments within the agglomeration which would have the effect of increasing discharges into Cork Harbour must provide secondary treatment before discharge to the public sewer.

**Measures planned to monitor emissions into the environment**

Changes to the Ringaskiddy Village collection system proposed under the Cork Lower Harbour Sewerage Scheme will eliminate the existing discharge from the agglomeration, as foul flows will be pumped forward to the proposed WWTP. On completion of the proposed scheme any emergency overflows and storm water overflows from the agglomeration will be monitored to comply with current DOEHLG 'Procedures and Criteria in relation to Storm water Overflows' guidelines.

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**SECTION B: GENERAL**

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

**B.1 Agglomeration Details**

<b>Name of Agglomeration:</b>	Ringaskiddy Village
-------------------------------	---------------------

**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.

<b>Name*:</b>	Cork County Council South
<b>Address:</b>	Floor 5, County Hall, Carrigrohane Road, Co. Cork
<b>Tel:</b>	021-4276891
<b>Fax:</b>	021-4276321
<b>e-mail:</b>	<a href="mailto:Corporate.affairs@corkcoco.ie">Corporate.affairs@corkcoco.ie</a>

\*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.

<b>Name*:</b>	Ms. Patricia Power, Director of Services, Area Operations South.
<b>Address:</b>	Floor 5, County Hall, Carrigrohane Road, Co. Cork.
<b>Tel:</b>	021-4285304
<b>Fax:</b>	021-4342098
<b>e-mail:</b>	<a href="mailto:Patricia.Power@corkcoco.ie">Patricia.Power@corkcoco.ie</a>

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

**Co-Applicant's Details**

<b>Name*:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Tel:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

\*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**

<b>Name*:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Tel:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

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

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

Attachment included	Yes	No
		√

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

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

<b>Name*:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Grid ref (6E, 6N)</b>	
<b>Level of Treatment</b>	
<b>Primary Telephone:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

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

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

Attachment included	Yes	No
		√

**B.3 Location of Primary Discharge Point**

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

<b>Type of Discharge</b>	525mmØ pipe
<b>Unique Point Code</b>	SW01RINV
<b>Location</b>	Ringaskiddy, Townland Loughbeg
<b>Grid ref (6E, 6N)</b>	E178202, N064723

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

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

**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.

<b>Type of Discharge</b>	NOT APPLICABLE
<b>Unique Point Code</b>	
<b>Location</b>	
<b>Grid ref (6E, 6N)</b>	

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

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

**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.

<b>Type of Discharge</b>	NOT APPLICABLE
<b>Unique Point Code</b>	
<b>Location</b>	
<b>Grid ref (6E, 6N)</b>	

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

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

**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.

<b>Name:</b>	Cork County Council
<b>Address:</b>	Floor 1, County Hall, Carrigrohane Road, Co. Cork.
<b>Tel:</b>	021-4276891
<b>Fax:</b>	021-4867007
<b>e-mail:</b>	planninginfo@corkcoco.ie

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

<b>has been obtained</b>		<b>is being processed</b>	
<b>is not yet applied for</b>		<b>is not required</b>	✓

<b>Local Authority Planning File Reference N<sup>o</sup>:</b>	NOT APPLICABLE
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**Attachment B.6** should contain **the most recent** planning permission, including a copy of **all** conditions, and where an EIS was required, copies of any such EIS and any certification associated with the EIS, should also be enclosed. Where planning permission is not required for the development, provide reasons, relevant correspondence, etc.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		√

**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.

<b>Within the SFADCo Area</b>	<b>Yes</b>	<b>No</b>
		√

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.

<b>Name:</b>	Health Services Executive South
<b>Address:</b>	Aras Slainte Wilton Road, Cork.
<b>Tel:</b>	021-4545011
<b>Fax:</b>	021-4927228
<b>e-mail:</b>	Not Available

B.7 (iii) Other Relevant Water Services Authorities

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

<b>Name:</b>	NOT APPLICABLE
<b>Address:</b>	
<b>Tel:</b>	
<b>Fax:</b>	
<b>e-mail:</b>	

<b>Relevant Authority Notified</b>	<b>Yes</b>	<b>No</b>
		√

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

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

**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 ( $\leq A3$ ) showing its location. **The original application must include the original page of the newspaper in which the advertisement was placed.** The relevant page of the newspaper containing the advertisement should be included with the original and one (1) copy of the application.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	✓	

**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.

<b>Population Equivalent</b>	797
<b>Data Compiled (Year)</b>	2009
<b>Method</b>	Census 2006 + House Count using 2008 Geodirectory

**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.

**B.9. (ii) Population Equivalent of agglomeration.**

The estimated Population Equivalent (PE) of the agglomeration is 797.

The PE is based on the following;

From 2008 Geodirectory:	
Number of domestic properties occupied:	218
No of commercial with domestic properties:	4
Total domestic properties:	222

Assuming occupancy rate of 3 persons per property = 666 persons  
 Adding 10% for other commercial and institutional loadings = 733 PE.  
 Pending development: approximately 80 residential units plus maximum possible extension to college, results in a total estimated PE of 640.

As it is Cork County Council policy that any significant developments which would have the effect of increasing discharges to the Harbour area must provide secondary treatment before discharge to the public sewer, the PE of the treated discharge from pending development is estimated at 10% of the PE loading i.e. 64 PE

Therefore Total PE: 733 + 64 = **797 PE**.  
 Equivalent BOD: 48kg BOD.

In the short term [in the next 5 years] the PE of the agglomeration is not expected to increase above the PE of 797 applied for.

The proposed WWTP will have a capacity of 80,000 population equivalent and can be expected to open with a load of approx. 50,000 PE which allows a margin of 30,000 PE for future growth. The WWTP is to be constructed on a design, build, operate basis and therefore no specifics regarding the detailed design of the development are available at this stage.

Consent of copy for other purposes only required for any other use.

**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 €)
501 < P.E. < 1000	€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.

A programme of works has been prioritised for the developments of infrastructure, to appropriately collect, convey, treat and discharge waste water from the agglomeration. The scheme is the Cork Lower Harbour Sewerage Scheme which has been approved by the DOEHLG to start in 2009 as part of the Water Services Investment Programme. Refer to Attachment B.10.

An Environmental Impact Statement (EIS) has been submitted to An Bord Pleanala and the Preliminary Report has been submitted to the Department of Environment, Heritage and Local Government (DOEHLG) for approval. The EIS forms part of this application.

The proposed programme for the Cork Lower Harbour Sewerage Scheme comprises of 4 contracts with estimated costs as follows:

1 Cobh	€20.6 m,
2 Carrigaline	€ 6.7 m
3 Passage/Monkstown/Ringaskiddy	€10.3 m
4. DBO Treatment Plant at Shanbally including Pumping Stations and River Crossing from Cobh	€54.0 m
<b>Total</b>	<b>€91.6 m</b>

Crosshaven works were completed under a separate contract and are already collected into Carrigaline from where the sewage is pumped forward with the Carrigaline sewage into the IDA outfall. (Refer to separate discharge licence application). Current estimated completion date: end of 2013.

WSIP Programme for Cork County Council as published by the DOEHLG is also attached.

**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
	√	

The EIS for the WWTP at Shanbally is with An Bord Pleanála (ABP). At a meeting on 22<sup>nd</sup> May, ABP advised that the EIS is with the Bord (i.e. that the Inspector has completed review of the application), and that a decision is expected within a few weeks. Any decision by An Bord may include the holding of an oral hearing, in which case the certification of the EIS would be further delayed.

Given the current delays to the project due to the delay in certification of the EIS, it is anticipated that the collection system upgrades and WWTP will be completed mid 2014. Discharges from Ringaskiddy Village agglomeration will cease on completion of the WWTP.

**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.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

**B.12 Foreshore Act Licences.**

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

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

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

The following information summarises details available of existing Foreshore Licences for Ringaskiddy Village agglomeration.

Table B.12

<b>File Ref</b>	MS51/8/393
<b>Dated</b>	14/06/1966
<b>County</b>	Cork
<b>Location</b>	Ringaskiddy
<b>Section</b>	Licence
<b>Particulars</b>	Erecting a septic tank wall and laying sewage pipe at foreshore at Ringaskiddy
<b>Customer</b>	Cork County Council
<b>Term</b>	99
<b>Effective from</b>	15/10/1965
<b>Rental</b>	€ 1.27

<b>File Ref</b>	MS51/8/249
<b>Deed Number</b>	170
<b>Dated</b>	04/11/1953
<b>County</b>	Cork
<b>Location</b>	Ringaskiddy
<b>Section</b>	Licence
<b>Particulars</b>	Laying of a sewage outfall pipe on state foreshore
<b>Customer</b>	Cork County Council
<b>Term</b>	99 years
<b>Effective from</b>	04/11/1953
<b>Rental</b>	€0.65

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**SECTION C: INFRASTRUCTURE & OPERATION**

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

**C.1 Operational Information Requirements**

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

**C.1.1 Storm Water Overflows**

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

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

**C.1.2 Pumping Stations**

For each pump station operating within the waste water works, provide details of the following:

- Number of duty and standby pumps at each pump station;
- The measures taken in the event of power failure;
- Details of storage capacity at each pump station;
- Frequency and duration of activation of emergency overflow to receiving waters. Clarify the location where such discharges enter the receiving waters.

**Attachment C.1** should contain supporting documentation with regard to the plant and process capacity, systems, storm water overflows, emergency overflows, etc., including flow diagrams of each with any relevant additional information. These drawings / maps should also be provided as geo-referenced digital drawing files (e.g. ESRI Shapefile, MapInfo Tab, AutoCAD or other upon agreement) in Irish National Grid Projection. This data should be provided to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, D.2, E.3 and F.2.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

There is no wastewater treatment plant serving the agglomeration at present. Wastewater collected in the agglomeration is discharged to the West Passage Cork Harbour through a single discharge point. There are plans in place to provide a wastewater treatment plant (WWTP) for the Lower Harbour area as part of the proposed Cork Lower Harbour Sewerage Scheme. However, the WWTP is not likely to be in place within the next 4 to 5 years.

**C.1.1. Overflows**

There are no overflows in the wastewater system. Sewage in Ringaskiddy Village is collected and conveyed directly to the discharge point by gravity.

It was initially proposed that any new pumping station located in Ringaskiddy Village would pump 6 times the Dry Weather Flow (6 DWF) forward to the proposed Waste Water Treatment Plant. However Cork County Council met with Mott McDonald Pettit Consulting Engineers on 3<sup>rd</sup> June, 2009, and it was agreed that remodelling work would be carried as necessary to ensure that all storm water overflows comply with Department of Environment Heritage & Local Government (DoEHLG) ‘Procedures and Criteria In Relation to Storm Water Overflows, 1995’.

Given the current delays to the project due to the delay in certification of the EIS, it is anticipated that the revised collection system and WWTP will be completed mid 2014. Decommissioning of any overflows (where appropriate) will occur at the same time.

**C.1.2. Pumping Stations:**

There are no pumping stations in the agglomeration.

**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.

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Attachment included	Yes	No
	√	

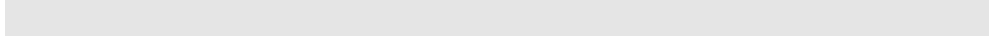
The collection system drains to one outfall point.

**Ringaskiddy Village - Primary Discharge:**

SW01RINV  
 525mm Ø pipe  
 Location: Ringaskiddy; Townland Loughbeg  
 E178202, N064723

Plan and longitudinal section of discharge pipe form the attachment for Section C. The sewage network in the agglomeration comprises of gravity system with a gravity outfall.

The discharge point consists of a gravity sewer pipe. There is no flap valve in place at the outfall. Surcharging occurs at this outfall section due to tidal levels.



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## 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/](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/](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.

#### Sources of Discharges:

Emissions from this agglomeration arise from two main sources:  
Domestic Loading and Non Domestic Loading.

#### Domestic Loading/Emissions

Geodirectory 2008 Housing Figures indicate 222 occupied domestic properties.  
Using occupancy rate of 3 = 666 persons.

#### Non Domestic Loading/Emissions

No significant industry in the area. Commercial and Institutional loadings are estimated at 10% of total population = 67 persons.

#### Pending Developments

Estimated treated P.E of 64.

Total P.E = 797

Details regarding location of discharge are given in Attachment B.3.

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

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
	√	

**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
Point Code Provide label ID's	Point Type (e.g., Primary/ Secondary/ Storm Water Overflow)	Local Authority Name (e.g., Donegal County Council)	Receiving Water Body Type (e.g., River, Lake, Groundwater, Transitional, Coastal)	Receiving Water Body Name (e.g., River Suir)	Protected Area Type (e.g., SAC, candidate SAC, NHA, SPA etc.)	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference

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](http://www.epa.ie). This data should be submitted to the Agency on a separate CD-Rom containing sections B.1, B.2, B.3, B.4, B.5, C.1, E.3 and F.2.



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**SECTION E: MONITORING**

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

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

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

**TABLE E.1 (I) WASTE WATER FREQUENCY AND QUANTITY OF DISCHARGE – PRIMARY DISCHARGE POINT**

Identification Code for Discharge Point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m3/annum)
SW01RINV (P)	365 days per annum	Not Available

**E.2. Monitoring and Sampling Points**

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

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

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

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

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

Attachment included	Yes	No
	√	

**E.3. Tabular data on Monitoring and Sampling Points**

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

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
Point Code Provide label ID's assigned in section E of application	Point Type (e.g., Primary, Secondary, Storm Water Overflow)	Monitoring Type M = Monitoring S = Sampling	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used
SW01RINV	Primary	S	E178202	N064723	Y

An individual record (i.e., row) is required for each monitoring and sampling point. Acceptable file formats include Excel, Access or other upon agreement with the Agency. A standard Excel template can be downloaded from the EPA website at [www.epa.ie](http://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.

<b>Attachment included</b>	<b>Yes</b>	<b>No</b>
		✓

**Section E.4 is NOT APPLICABLE**

## 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/](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.

- o Describe the existing environment in terms of water quality with particular reference to environmental quality standards or other legislative standards. Submit a copy of the most recent water quality management plan or catchment management plan in place for the receiving water body. Give details of any designation under any Council Directive or Regulations that apply in relation to the receiving water.
- o Provide a statement as to whether or not emissions of main polluting substances (as defined in the *Dangerous Substances Regulations S.I. No. 12 of 2001*) to water are likely to impair the environment.
- o In circumstances where water abstraction points exist downstream of any discharge describe measures to be undertaken to ensure that discharges from the waste water works will not have a significant effect on faecal coliform, salmonella and protozoan pathogen numbers, e.g., Cryptosporidium and Giardia, in the receiving water environment.
- o Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –
  - (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) –
    - (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,
    - (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or
    - (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,
  - (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC<sup>1</sup> 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<sup>2</sup>;

<sup>1</sup>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)

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

- Describe, where appropriate, measures for minimising pollution over long distances or in the territory of other states.
- This section should also contain full details of any modelling of discharges from the agglomeration. Full details of the assessment and any other relevant information on the receiving environment should be submitted as **Attachment F.1.**

Attachment included	Yes	No
	√	

The existing discharge from the Ringaskiddy Village agglomeration discharges to the West Passage of Cork’s Lower Harbour. This discharge is downstream of the outfall from the Cork City WWTP at Carrigrenan which has a PE load of 413,000. Cork Harbour is considered to be one of the largest natural harbours in the world. It consists of two main sections: the Upper Harbour including the Lee Estuary and Lough Mahon and the Lower Harbour which are connected by an east channel and west channel. The west channel is the larger of the two and the majority of the tidal exchange volume occurs through the west channel.

The Urban Waste Water Treatment (Amendment) Regulations 2004 (SI No 440 of 2004) has designated the ‘Lee Estuary/Lough Mahon – from the salmon weir (downstream of Cork City waterworks intake) to Monkstown (excluding North Channel at Great Island)’ as sensitive waters.

Within the Lower Harbour area there are a number of protected conservation areas namely, Cork Harbour Special Protection Area (SPA) and the Great Island Channel Special Area of conservation (SAC). A number of proposed Natural Heritage Areas, pNHAs, are also designated including: Monkstown Creek pNHA and Owenboy River pNHA (refer to drawings ‘Map 05’, ‘Map 06’, and ‘Map 07’).

There are no water abstraction points downstream of the Ringaskiddy Village discharge point. According to the EPA, water quality in the Lower Harbour area is classed as ‘intermediate’ and water quality within Cork Harbour has exhibited an improvement over the last two years, due, in part, to the operation of Carrigrenan WWTP in 2005.

There are no designated bathing waters within the confines of Cork Harbour. Drawing ‘Map 03’ attached is a location map showing the location of the nearest waters used by members of the public for bathing. Fountainstown beach, located outside the mouth of the harbour, is the closest designated bathing water, at a distance of approximately 10 km from the discharge point. ‘Bathing Water Quality Map of Ireland 2007’, prepared by EPA, indicates that Fountainstown is compliant with EU guidelines (‘good quality’).

There are no areas designated in Cork Harbour under the quality of Shellfish water Regulations 1994. ‘Map 04’ shows the location of proposed designated shellfish

waters. Cork Lower Harbour is not designated as sensitive water under the Quality of Shellfish Waters Regulations, 2006 (S.I. 268012006).

Existing water quality data from the EPA indicate that there is no current negative impact on the transitional receiving waters as a result of the discharges from the agglomeration.

McDonald Pettit, Consulting Engineers have prepared an Environmental Impact Statement (EIS) for the proposed wastewater treatment plant – a copy of which is included with this Wastewater Discharge Licence Application. Reference should be made to the EIS for a more detailed assessment of Environmental Impacts:

- ‘Chapter 3 – Receiving Environment’, Volume II EIS (Page 71)
- ‘Appendix 3A - Hydrodynamic & Modelling Report’, Volume III EIS
- ‘Appendix 4A - Geophysical Report’, Volume III EIS
- ‘Appendix 4B - Bedrock Geological Survey’, Volume III EIS
- ‘Appendix 5C - Climate Change Report’, Volume III EIS

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

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

ABS_CD	AGG_SERVED	ABS_VOL	PT_CD	DIS_DS	EASTING	NORTHING	VERIFIED
Abstraction Code	Agglomeration served	Abstraction Volume in m <sup>3</sup> /day	Point Code Provide label ID's	Distance Downstream in meters from Emission Point to Abstraction Point	6E-digit GPS Irish National Grid Reference	6N-digit GPS Irish National Grid Reference	Y = GPS used N = GPS not used

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

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](http://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 F.2 IS NOT APPLICABLE**



## SECTION G: PROGRAMMES OF IMPROVEMENTS

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

### G.1 Compliance with Council Directives

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

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

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

A programme of works has been prioritised for the developments of infrastructure to appropriately collect, convey, treat and discharge waste water from the agglomeration. The scheme is the Cork Lower Harbour Sewerage Scheme which has been approved by the DOEHLG to start in 2009 as part of the Water Services Investment Programme. Refer to [Attachment B.10](#).

An Environmental Impact Statement (EIS) has been submitted to An Bord Pleanála and the Preliminary Report has been submitted to the Department of Environment, Heritage and Local Government (DOEHLG) for approval. The EIS forms an attachment to this application and deals in depth with the improvements that will be made to the environment as a result of the proposed WWTP.

The proposed programme comprises of 4 contracts with estimated costs as follows:

1 Cobh	€20.6 m,
2 Carrigaline	€ 6.7 m
3 Passage/Monkstown/Ringaskiddy	€10.3 m
4. DBO Treatment Plant at Shanbally including Pumping Stations and River Crossing from Cobh	€54.0 m
<b>Total</b>	<b>€91.6 m</b>

Crosshaven works were completed under a separate contract and are already collected into Carrigaline from where the sewage is pumped forward with the

Carrigaline sewage into the IDA outfall (refer to separate discharge licence application). Current estimated completion date: end of 2013.

WSIP Programme for Cork County Council as published by the DOEHLG is also attached.

Attachment included	Yes	No
	√	

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

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

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

Attachment included	Yes	No
		√

**Section G.2 is Not Applicable**

**G.3 Impact Mitigation**

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

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

Attachment included	Yes	No
	√	

A programme of works has been prioritised for the development of infrastructure to appropriately collect, convey, treat and discharge waste water from the agglomeration. The scheme is the Cork Lower Harbour Sewerage Scheme which has been approved by the DOEHLG to start in 2009 as part of the Water Services Investment Programme. Refer to Attachment B.10.

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<b>Total</b>	<b>€91.6 m</b>

Crosshaven works were completed under a separate contract and are already collected into Carrigaline from where the sewage is pumped forward with the Carrigaline sewage into the IDA outfall (refer to separate discharge licence application). Current estimated completion date: end of 2013.

WSIP Programme for Cork County Council as published by the DOEHLG is also attached.

**G.4 Storm Water Overflow**

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

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

Attachment included	Yes	No

Currently there are no storm water overflows in this agglomeration. Changes to the Ringaskiddy Village collection system proposed under the Cork Lower Harbour Sewerage Scheme will eliminate the existing discharge from the agglomeration, as foul flows will be pumped forward to the proposed WWTP. On completion of the proposed scheme any emergency overflows and storm water overflows from the agglomeration will be monitored to comply with current DOEHLG 'Procedures and Criteria in relation to Storm water Overflows' guidelines.

**SECTION H: DECLARATION**

**Declaration**

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

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

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

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

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

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

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**SECTION H: DECLARATION**

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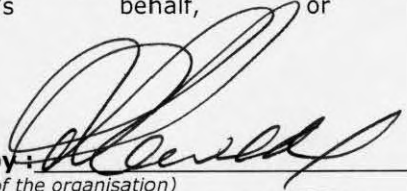
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This consent relates to this application itself and to any further information or submission, whether provided by me as Applicant, any person acting on the Applicant's behalf, or any other person.

Signed by:   
(on behalf of the organisation)

Date: June 18<sup>th</sup> 09

Print signature name: P. Power

Position in organisation: D. O. S.

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**SECTION I: JOINT DECLARATION**

**Joint Declaration** <sup>Note1</sup>

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.

**NOT APPLICABLE**

**Lead Authority**

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

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

**Co-Applicants**

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

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

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

**Print signature name:** \_\_\_\_\_

**Position in organisation:** \_\_\_\_\_

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

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## ANNEX 2: Check List For Regulation 16 Compliance

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

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

<b>Regulation 16(1) In the case of an application for a waste water discharge licence, the application shall -</b>		<b>Attachment Number</b>	<b>Checked by Applicant ✓</b>
<b>(a)</b>	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,	<b>Section B1</b>	✓
<b>(b)</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,	<b>N/A</b>	✓
<b>(c)</b>	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,	<b>Section B3</b>	✓
<b>(d)</b>	state the population equivalent of the agglomeration to which the application relates,	<b>Section B9(i)</b>	✓
<b>(e)</b>	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	<b>Sections A, C, D &amp; E</b>	✓
<b>(f)</b>	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.	<b>Section A, Map 05, Map 06, Map 07, Attachment F1, EIS</b>	✓

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<b>Regulation 16(1) continued.../</b>		<b>Attachment Number</b>	<b>Checked by Applicant ✓</b>
<b>(g)</b>	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,	<b>Section E, Attachment F1 &amp; EIS</b>	✓
<b>(h)</b>	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,	<b>N\A</b>	✓
<b>(i)</b>	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,	<b>Section A, E, G &amp; Attachment F1</b>	✓
<b>(j)</b>	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,	<b>N/A</b>	✓
<b>(k)</b>	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,	<b>Attachment F1 &amp; EIS</b>	✓
<b>(l)</b>	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	<b>EIS</b>	✓
<b>(m)</b>	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	<b>Section A &amp; G. Attachment F1</b>	✓
<b>(n)</b>	Any other information as may be stipulated by the Agency.	<b>N\A</b>	✓



<b>Regulation 16(3)</b> Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -	<b>Attachment Number</b>	<b>Checked by the applicant</b> ✓
<b>(a)</b> a copy of the notice of intention to make an application given pursuant to Regulation 9,	<b>Attachment B8</b>	✓
<b>(b)</b> where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,	<b>N/A</b>	✓
<b>(c)</b> Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -	-----	-----
(i) the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and	<b>N/A</b>	✓
(ii) the point or points at which monitoring and sampling are undertaken or are to be undertaken,	<b>Section E</b>	✓
<b>(d)</b> such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	<b>B9</b>	✓
<b>Regulation 16(4)</b> 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.		
<b>Regulation 16(5)</b> For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic format specified by the Agency.		
Signed original.		✓
2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		✓
1 CD of geo-referenced digital files provided.		✓
<b>Regulation 17</b> Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency		
EIA provided if applicable		<b>N/A</b>
2 hardcopies of EIS provided if applicable.		✓
2 CD versions of EIS, as PDF files, provided.		✓

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## **Contents of Attachments**

### **Section A – Non Technical Summary**

- Map 01 – Extent of Agglomeration
- Map 02 – Outline of Agglomeration
- Map 03 – Location of Bathing Waters
- Map 04 – Shellfish Waters
- Map 05 – NHA Areas
- Map 06 – SPA Areas
- Map 07 – SAC Areas

### **Section B- General Details**

- Section B.1 – Agglomeration Served by Application
  - Map 08 - Outline of Agglomeration
- Section B.3 – Location of Primary Discharge Point
  - Map 09 – Location of Primary Discharge
- Section B.8 – Notices and Advertisements
  - Copy of Site Notice
  - Copy of Newspaper Advertisement
  - Map 10 – Location of Site Notice
- Section B.9 – Fees
  - Copy of Paying Order
- Section B.10 – Capital Investment Programmes
  - Copy of Water Services Investment Programme

### **Section C – Infrastructure & Operation**

- Section C.2 – Outfall Design & Construction
  - Drawing 01 – Construction Details Ringaskiddy Village Outfall
  - Drawing 02 – Construction Details Ringaskiddy Village Outfall

### **Section D – Discharges to the Aquatic Environment**

- Section D.1 – Discharges to Surface/Ground Waters
  - Table D.1 – Discharges to Surface Water
- Section D.2 – Tabular Data on Discharge Points
  - Table D.2 – Tabular Data on Discharge Points

### **Section E – Monitoring**

- Section E.1 – Waste Water Discharge Frequency & Quantities
- Section E.2 – Monitoring & Sampling Points
  - Attachment to Application Form – Monitoring & Laboratory Accreditation
  - Map 11 – Sampling Point
- Section E.3 – Tabular Data on Monitoring & Sampling Points

### **Section F – Existing Environment & Impact of the Discharge(s)**

- Section F.1 – Assessment of Impact on Receiving Surface or Ground Water
  - Attachment to Application Form – Existing Environment & Impact of the Discharge
  - Table F.1 – Surface/Ground Water Monitoring
  - Map 12 – Monitoring Points

**Section G – Programme of Improvements**

Section G.1 – Compliance with Council Directives

Copy of Water Services Investment Programme

Section G.3 – Impact Mitigation

Copy of Water Services Investment Programme

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Cork County Council  
 South Cork Division



N. O'Keefe, B.Eng., C.Eng., Eur. Ing., F.I.E.L., M.I.C.E.,  
 Acting County Engineer  
 County Hall, Cork.

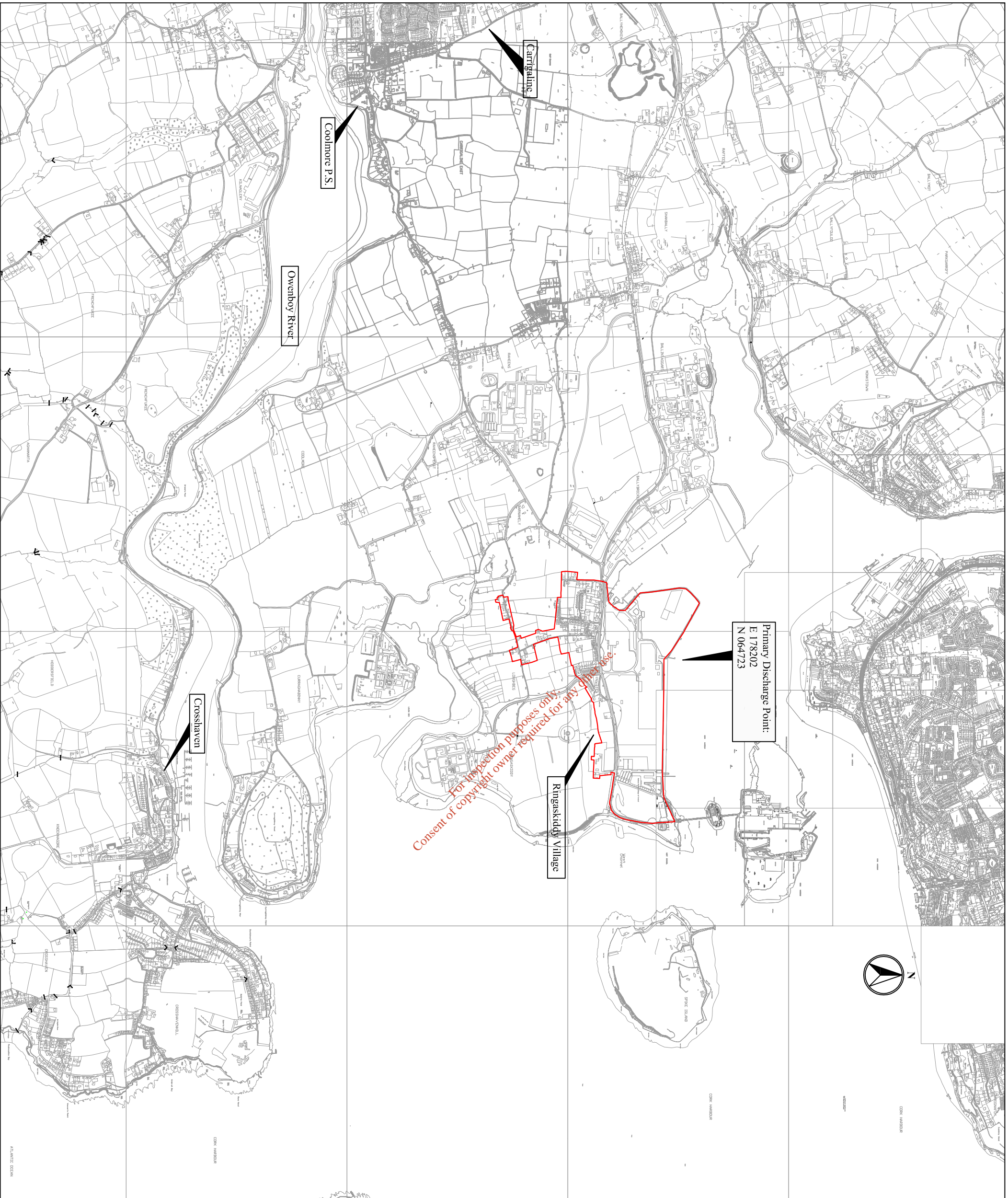
P. Power  
 Director of Services  
 South Cork.

Project:  
**EPA LICENCE APPLICATION**  
 Ringaskiddy Village

Title:  
**Attachment - Section A1**  
**Non-Technical Summary**  
**Extent of Agglomeration**

Designed:	Checked:	Scale:	Drawing No.
<b>BOL</b>	<b>MS</b>	<b>1:50,000</b>	
Drawn:	Approved:	Date:	<b>Map 01</b>
<b>BOL</b>	<b>MS</b>	<b>15/04/09</b>	





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**South Cork Division**



N. O'Keefe, B.Eng., C.Eng., Eur. Ing., F.I.E.I., M.I.C.E.,  
 Acting County Engineer  
 County Hall, Cork.

P. Power  
 Director of Services  
 South Cork.

**Project:**  
**EPA LICENCE APPLICATION**  
 Ringaskiddy Village

**Title:**  
**Section A**  
**Non Technical Summary**  
 Outline of Agglomeration

Designed: <b>BOL</b>	Checked: <b>MS</b>	Scale: 1:12500	Drawing No.
Drawn: <b>BOL</b>	Approved: <b>MS</b>	Date: 26/03/09	<b>Map 02</b>





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Discharge Point at  
E 178202  
N 064723

LEGEND	
Bathing Areas	
1-Cobby	E179480, N064680
2-Luch	E179150, N063410
3-Curragehinny Pier	E179800, N061800
4-Grab-all Bay	E180950, N061300
5-White Bay	E182700, N061500
6-Church Bay	E180750, N060240
7-Myrtleville	E179700, N058900
8-Fountainstown	E178650, N058050
Co-ords	
Dist from Discharge Pt	
1.4 km	
3.2 km	
5.2 km	
5.7 km	
6.4 km	
6.8 km	
8.5 km	
9.9 km	

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**Cork County Council**  
South Cork Division

N. O'Keefe, B.Eng., C.Eng., Eur. Ing., F.I.E.L., M.I.C.E.,  
Acting County Engineer  
County Hall, Cork.

P. Power  
Director of Services  
South Cork.

**Project:**  
EPA LICENCE APPLICATION  
Ringaskiddy Village

**Title:**  
Attachment - Section A  
Non Technical Summary  
Location of Bathing Waters

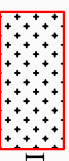
Designed:	Checked:	Scale:	Drawing No.
BOL	MS	1:50,000	Map 03
Drawn:	Approved:	Date:	
BOL	MS	15/04/09	





Discharge Point at  
SWOIRINWY  
E 178202  
N 064723

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**LEGEND**  
 Draft Shellfish Designation

For further details refer to Lower Harbour EIS Volume II, Fig. 3.2.5 & Section 3.2.3

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Cork County Council  
 South Cork Division  
 N. O'Keefe, B.Eng., C.Eng., Eur. Ing., F.I.E.L., M.I.C.E.,  
 Acting County Engineer  
 County Hall, Cork.  
 P. Power  
 Director of Services  
 South Cork.



Project:  
**EPA LICENCE APPLICATION**  
 Ringaskiddy Village

Title:  
**Section A**  
**Non Technical Summary**  
**Shellfish Waters**

Designed:	Checked:	Scale:	Drawing No.
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Drawn:	Approved:	Date:	Map 04
BOL	MS	15/04/09	

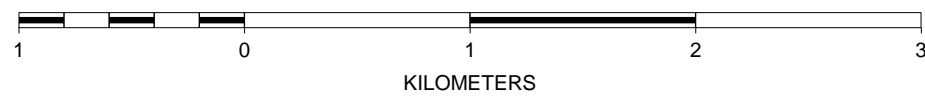


# Attachment - Section A - Non Technical Summary - Proposed NHA Areas - Map 05

Dúchas  
Proposed Natural Heritage Areas - Updated May08  
OS Raster Maps  
Discovery (15000 - 50000m)



SCALE 1 : 33,577

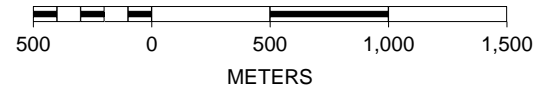


# Attachment - Section A - Non Technical Summary - SPA Areas - Map 06

Dúchas  
Special Protected Areas - Updated Dec08  
OS Raster Maps  
Discovery (15000 - 50000m)



SCALE 1 : 32,009



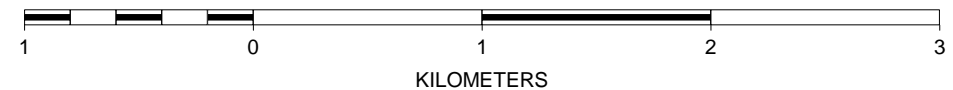


# Attachment - Section A - Non Technical Summary - SAC Areas - Map 07

- Dúchas
- Special Areas of Conservation - Updated Dec08
- OS Raster Maps
- Discovery (15000 - 50000m)



SCALE 1 : 33,083



KILOMETERS



# Attachment B.10. Capital Investment Programme

## Cork County

### Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 cont'd.	W/S	Est. Cost
<b>Cork North</b>			<b>Cork South</b>		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballingligg Sewerage Scheme (Upgrade) (G)	S	22,248,000
			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS) (S)	S	73,542,000
<b>Cork South</b>			Shamagarry/Garrywool/Ballyodan Sewerage Scheme	S	3,780,000
Ballycurney/ Ballymaekery Sewerage Scheme	S	3,049,000	Youghal Sewerage Scheme	S	14,420,000
Cobh/ Midleton/ Carrigrohilly Water Supply Scheme	W	10,135,000			
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	<b>Cork West</b>		
Cork Water Strategy Study (G)	W	941,000	Ballydohob Sewerage Scheme	S	693,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Cronakilly Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmaashery/ Timoleague Sewerage Scheme	S	2,472,000
<b>Schemes to start 2007</b>			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
<b>Cork North</b>			<b>Service Land Initiative</b>		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kibrin)	S	5,150,000	<b>Cork North</b>		
<b>Cork West</b>			Ballydough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballydooley Improvement Scheme	W/S	139,000
		25,150,000	Broggilly-Rathgoggin Sewerage Scheme	S	405,000
<b>Schemes to start 2008</b>			Bweeng Water Supply Scheme	W	115,000
<b>Cork North</b>			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinter Regional Water Supply Scheme (H)	W	8,652,000	Condulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	5,408,000	Freemount Sewerage Scheme	S	190,000
<b>Cork South</b>			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballingligg Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathgoggin Sewerage Scheme (incl. Water)	W/S	535,000
Ballingeary Sewerage Scheme	S	1,296,000	Ros Gully Sewerage Scheme	S	735,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uplinton Farmoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	2,000,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghros Sewerage Scheme (Upgrade)	S	823,000	<b>Cork South</b>		
Coashford Water Supply Scheme	W	1,394,000	Ballingligg Sewerage Scheme (Bany's Rd Foulard Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgodey Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscaura Water Treatment Plant Extension Phase 1	W	2,678,000	Bantry Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigrohilly Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
<b>Cork West</b>			Castlemartyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dipsay Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glourthene Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Irishannon Sewerage Scheme	S	277,000
		61,137,000	Irishannon Wastewater Treatment Plant	S	694,000
<b>Schemes to start 2009</b>			Kerrypike Sewerage Scheme	S	832,000
<b>Cork North</b>			Kerrypike Water Supply Scheme	W	416,000
Banteen/Dromahane Regional Water Supply Scheme	W	1,576,000	Kilbegh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Kilbegh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Kilbena Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Milstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,030,000



## Cork County contd.

### Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning contd.	W/S	Est. Cost
<b>Cork South contd.</b>			<b>Cork South</b>		
Mogely Castlemarye & Ladsbridge Water Supply Scheme	W	2,566,000	Carriewhill Sewerage Scheme (G)	S	20,000,000
North Cdh. Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Rivestick Water Supply Scheme (Ind. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballinoolig & Chetwind) (G)	W	8,500,000
Rohestown Water Supply Scheme	W	2,700,000	Intracama Water Treatment Plant (Sludge Treatment)(G/W)		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
<b>Cork West</b>			<b>Cork West</b>		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,787,000	Cape Clear Water Supply Scheme	W	1,679,000
<b>Rural Towns &amp; Villages Initiative</b>			Castletownbere Regional Water Supply Scheme		
			Glenamiff Sewerage Scheme	S	2,500,000
<b>Cork North</b>			Roscarberry/Owenahincha Sewerage Scheme		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000			95,646,000
<b>Cork South</b>			<b>Water Conservation Allocation</b>		
Imisharmon (Ballinacoe/Ballinspittle/Garretstown) Water Supply Scheme	W	6,726,000			12,206,000
<b>Cork West</b>			<b>Asset Management Study</b>		
					300,000
Ballydy Sewerage Scheme	S	2,153,000	South Western River Basin District (WFD) Project <sup>1</sup>		
Baltimore Sewerage Scheme	S	3,162,000			9,400,000
Castletownbere Sewerage Scheme	S	5,202,000	<b>Programme Total</b>		
Schull Sewerage Scheme	S	3,523,000			<b>485,489,000</b>
		<b>24,550,000</b>			
<b>Schemes to Advance through Planning</b>					
<b>Cork North</b>					
Milchdstown North Galtees Water Supply Scheme	W	3,620,000			
Milchdstown Sewerage Scheme	S	3,460,000			
Newmarket Sewerage Scheme	S	3,152,000			

<sup>1</sup> 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



# 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, Cork County Council, Carrigrohane Road, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the Ringaskiddy Village agglomeration with a discharge point at the following location:

Discharge	Function	Townland	Receptor	Grid Reference
Primary	Major Outfall	Loughbeg	Cork Harbour (West Passage)	E178202 N064723

It is intended to submit the Environmental Impact Statement associated with the proposed provision of a Waste Water Treatment Plant in the Lower Harbour to the Agency along with the Application.

A copy of the application for the Waste Water Discharge Licence, the Environmental Impact Statement 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: 021-4276891 Fax: 021-4276321.

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

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, Cork County Council, Carrigrohane Road, Cork is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for Ringaskiddy Village agglomeration with a discharge point at the following location:

<b>Discharge</b>	<b>Function</b>	<b>Townland</b>	<b>Receptor</b>	<b>Grid Reference</b>
<b>Primary</b>	<b>Major Outfall</b>	<b>Loughbeg</b>	<b>Cork Harbour (West Passage)</b>	<b>E178202 N064723</b>

It is intended to submit to the Environmental Impact Statement associated with the proposed provision of a Waste Water Treatment Plant in the Lower Harbour to the Agency along with the Application.

A copy of the application for the Waste Water Discharge Licence, the Environmental Impact Statement 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

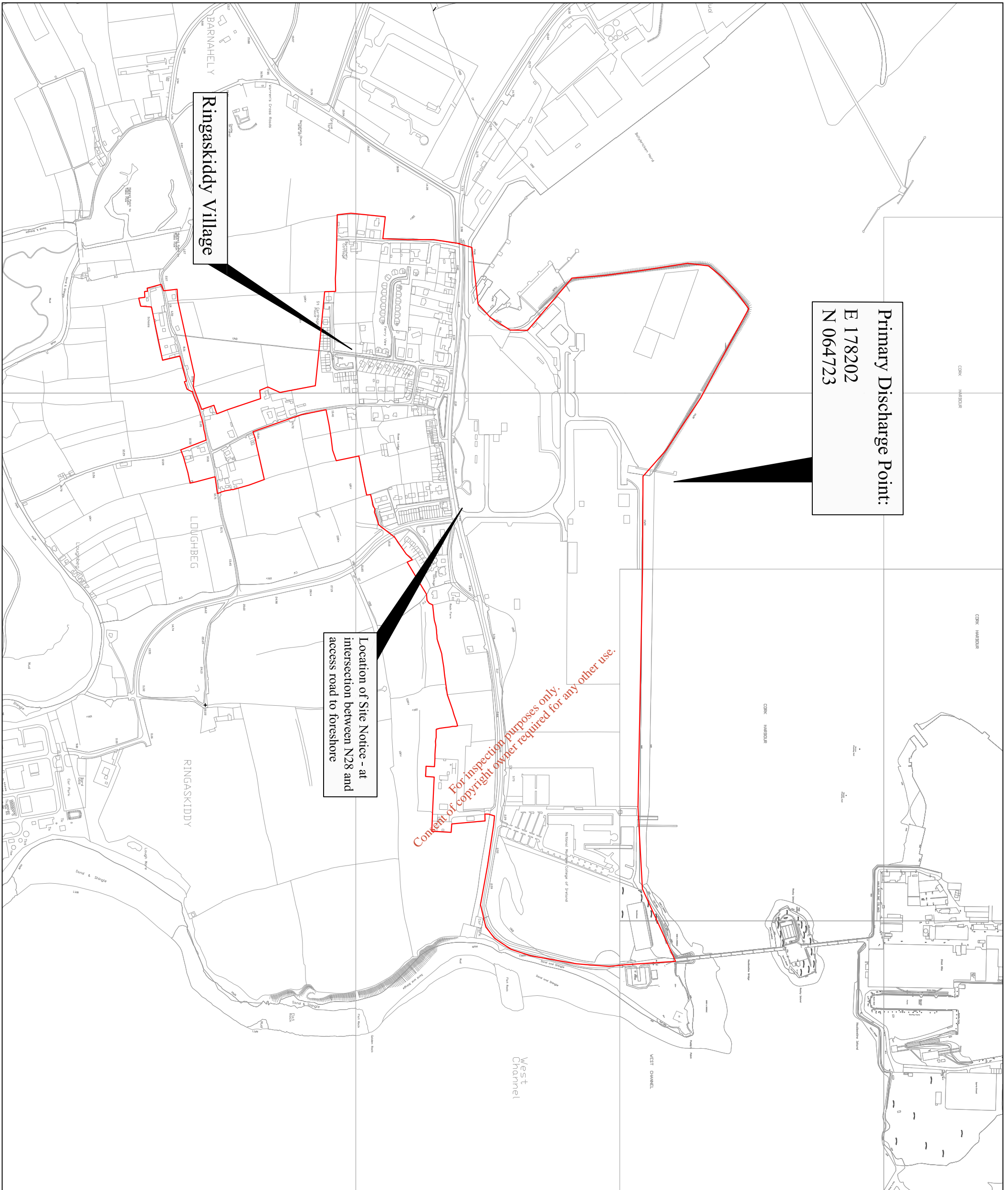
- Environmental Protection Agency, PO Box 3000, Johnstown Castle Estate, Co. Wexford, Lo Call 1890 335599 Telephone: 053-9160600 Fax: 053-9160699 Email: info@epa.ie
- and at
- Cork County Council Offices, Water Services South, County Hall, Carrigrohane Road, Cork, Telephone: 021-4276891 Fax: 021-4276321.

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









**Primary Discharge Point:**  
 E 178202  
 N 064723

**Location of Site Notice - at  
 intersection between N28 and  
 access road to foreshore**

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**Cork County Council  
 South Cork Division**

N. O'Keefe, B.Eng., C.Eng., Eur.Ing., F.I.E.I., M.I.C.E.,  
 Acting County Engineer  
 County Hall, Cork.

P. Power  
 Director of Services  
 South Cork.

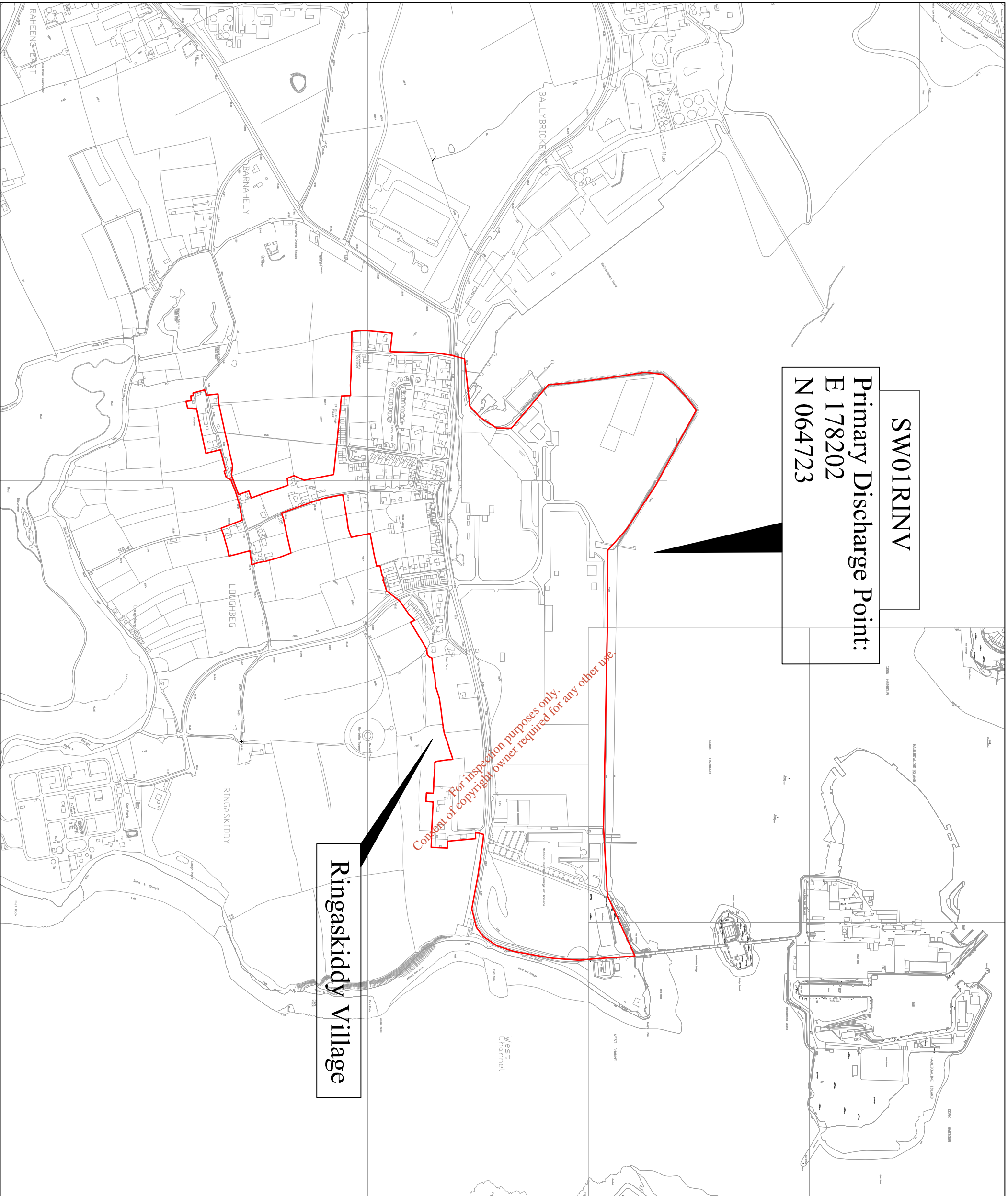
**Project:**  
 EPA LICENCE APPLICATION  
 Ringaskiddy Village

**Title:**  
 Attachment Section B.8  
 Applicants Details  
 Site Notice

Designed:	Checked:	Scale:	Drawing No. <b>Map 10</b>
<b>BOL</b>	<b>MS</b>	1:10,000	
Drawn:	Approved:	Date:	
<b>BOL</b>	<b>MS</b>	16/04/09	

SW01RINV

Primary Discharge Point:  
E 178202  
N 064723



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**Outline of Agglomeration in RED**

Ringaskiddy Village

Cork County Council  
South Cork Division



N. O'Keefe, B.Eng., C.Eng., Eur. Ing., F.I.E.I., M.I.C.E.,  
Acting County Engineer  
County Hall, Cork.

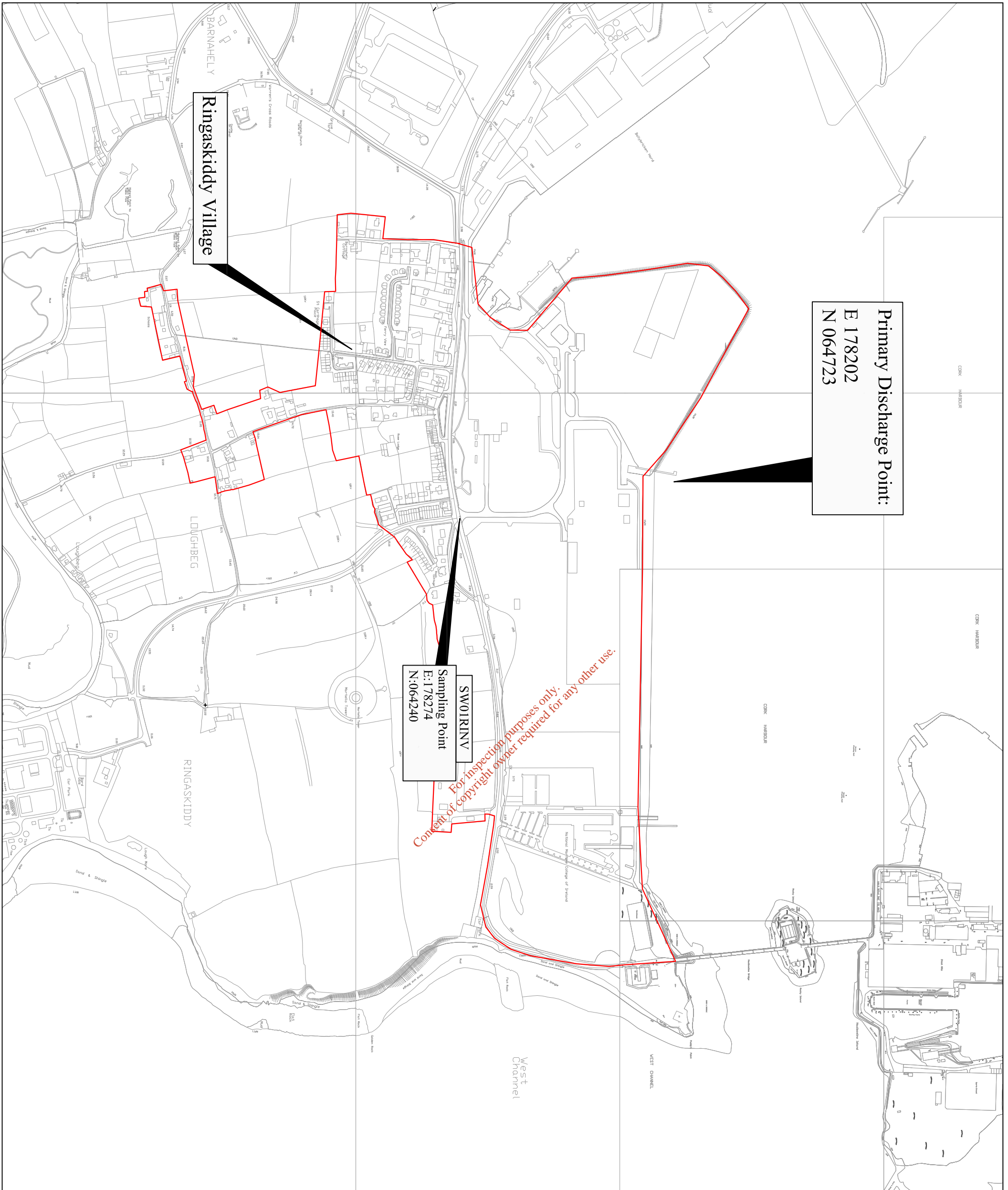
P. Power  
Director of Services  
South Cork.

Project:  
EPA LICENCE APPLICATION  
Ringaskiddy Village

Title:  
Attachment Section B.1  
Applicants Details  
Outline of Agglomeration

Designed: BOL	Checked: MS	Scale: 1:12500	Drawing No. Map 08
Drawn: BOL	Approved: MS	Date: 16/04/09	





**Primary Discharge Point:**  
 E 178202  
 N 064723

**SW01RINV**  
**Sampling Point**  
 E:178274  
 N:064240

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**Cork County Council**  
**South Cork Division**



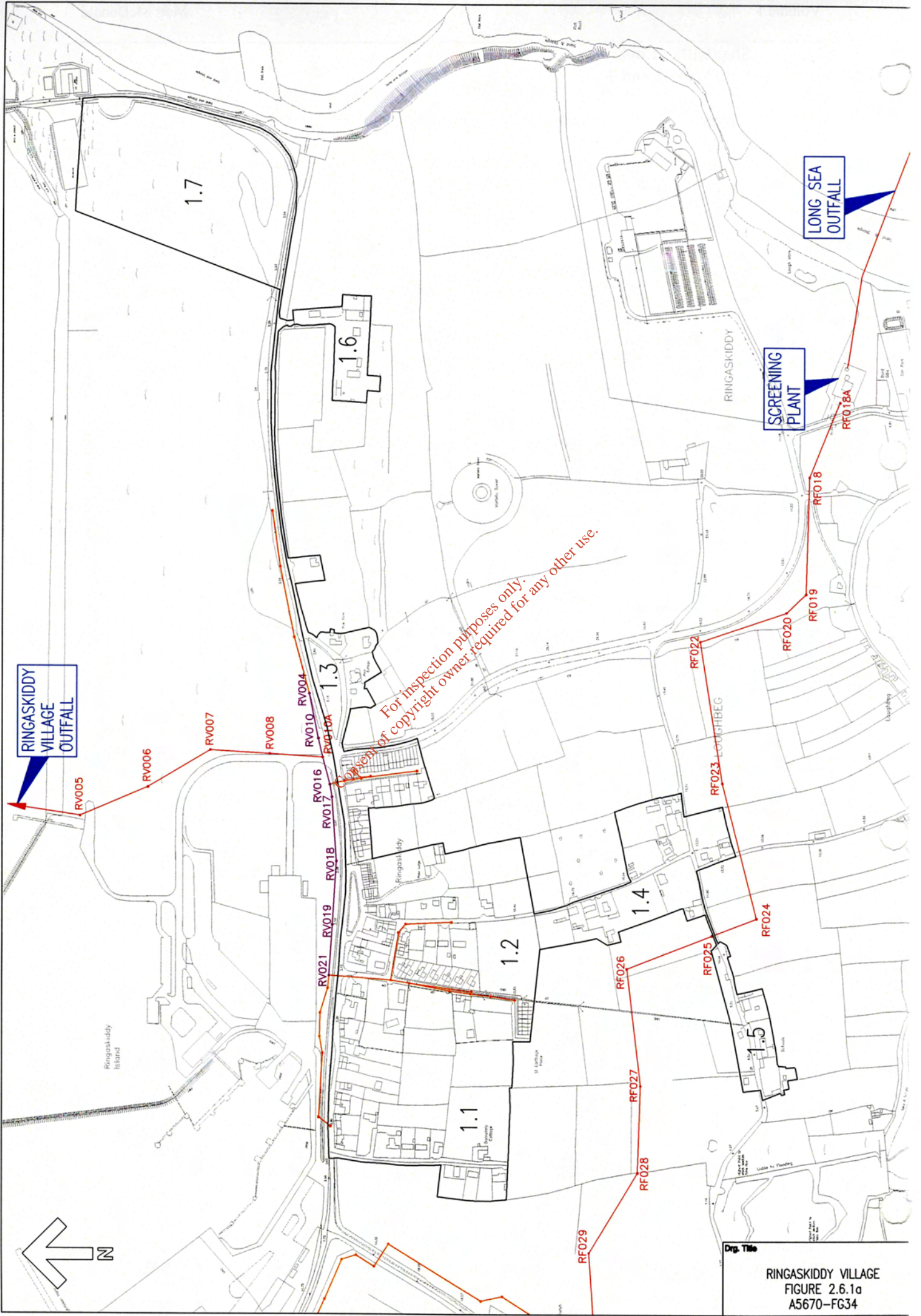
N. O'Keefe, B.Eng., C.Eng., Eur.Ing., F.I.E.I., M.I.C.E.,  
 Acting County Engineer  
 County Hall, Cork.

P. Power  
 Director of Services  
 South Cork.

**Project:**  
**EPA LICENCE APPLICATION**  
 Ringaskiddy Village

**Title:**  
**Attachment Section B.3**  
**Location of Primary**  
**Discharge Point**

Designed:	Checked:	Scale:	Drawing No. <b>Map 09</b>
<b>BOL</b>	<b>MS</b>	1:10,000	
Drawn:	Approved:	Date:	
<b>BOL</b>	<b>MS</b>	16/04/09	



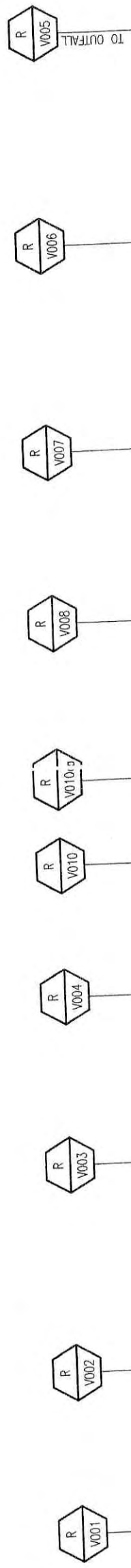
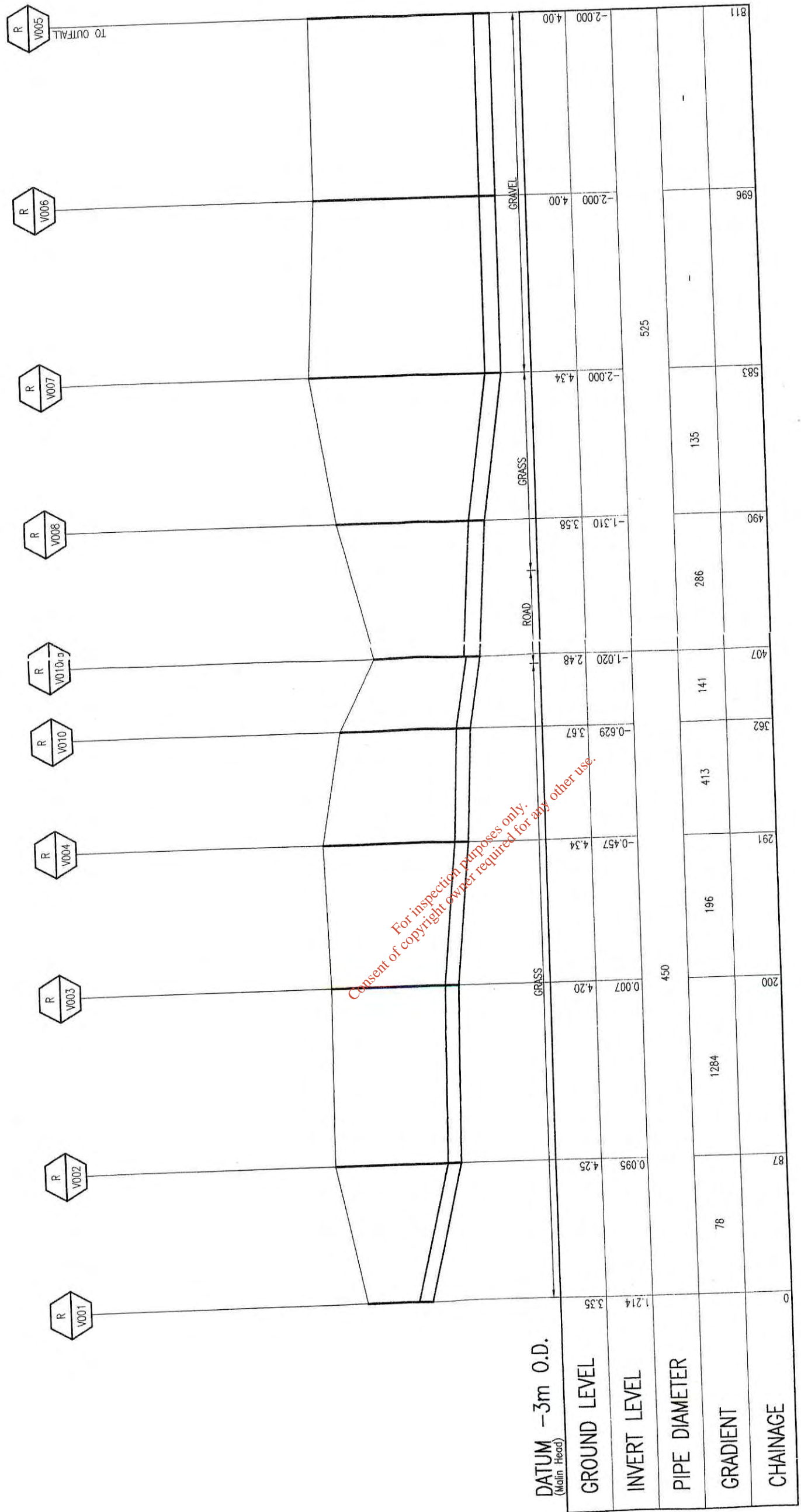
**RINGASKIDDY VILLAGE OUTFALL**

**SCREENING PLANT**

**LONG SEA OUTFALL**

**RINGASKIDDY VILLAGE**  
**FIGURE 2.6.1a**  
**A5670-FG34**







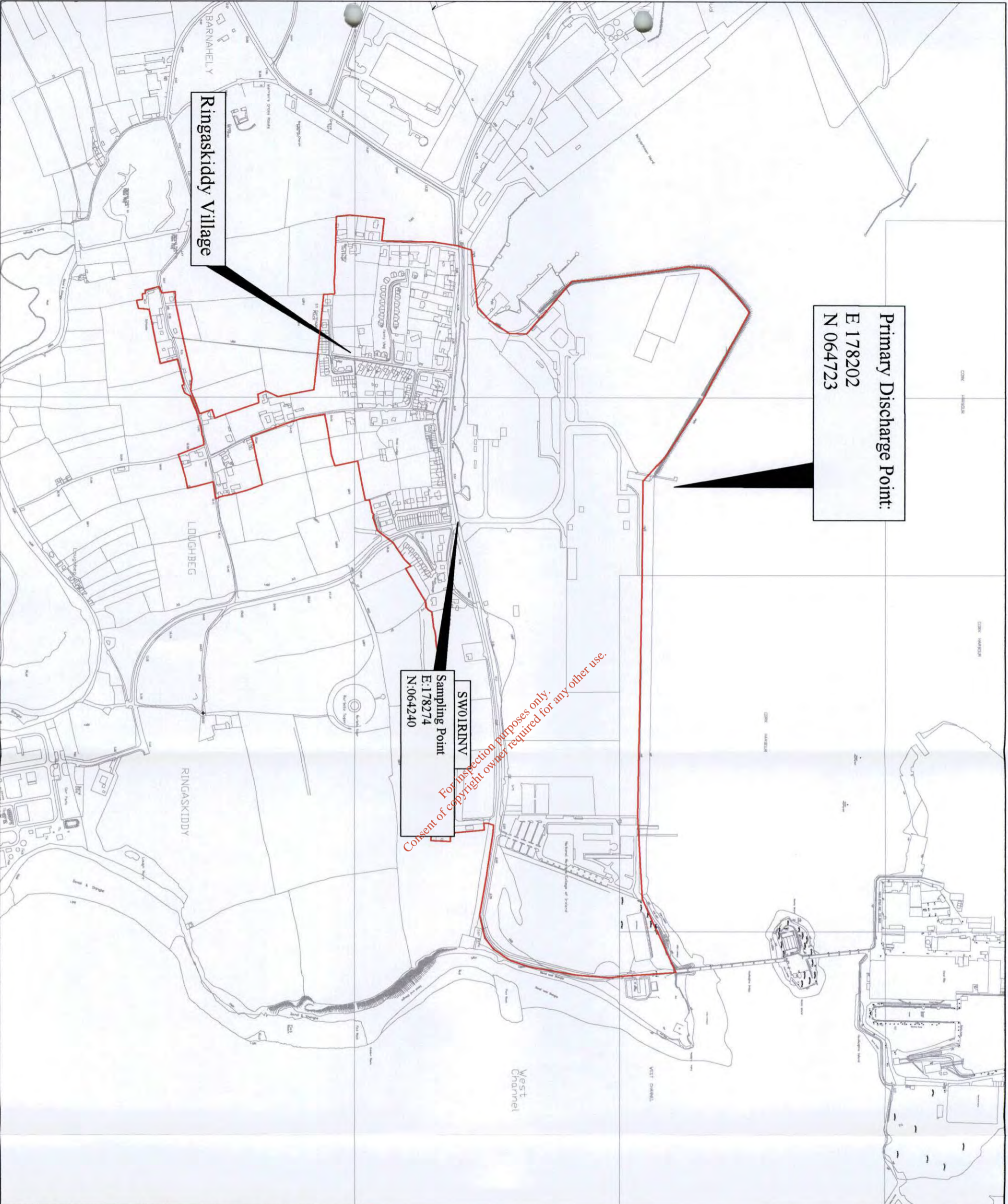













**Primary Discharge Point:**  
 E 178202  
 N 064723

**SW01RINV**  
**Sampling Point**  
 E:178274  
 N:064240

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**Cork County Council**  
**South Cork Division**



N. O'Keefe, B.Eng, C.Eng, Burling, F.I.E.I., M.I.C.E.,  
 Acting County Engineer  
 County Hall, Cork.  
 P. Power  
 Director of Services  
 South Cork.

**Project:**  
**EPA LICENCE APPLICATION**  
 Ringaskiddy Village

**Title:**  
 Attachment E2  
 Sampling Point

<b>Designed:</b> BOL	<b>Checked:</b> MS	<b>Scale:</b> 1:10,000	<b>Drawing No.</b> Map 11
<b>Drawn:</b> BOL	<b>Approved:</b> MS	<b>Date:</b> 16/04/09	







# ATTACHMENT F.1 – EXISTING ENVIRONMENT & IMPACT OF DISCHARGE

## F.1.1 Existing and Proposed Waste Water Discharges

### F.1.1.1 Background

The National Parks & Wildlife Service have suggested that “the proposed Waste water discharge is considered likely to have significant adverse effects on a European site” due to uncertainty associated with the:

*“Ability of WWTP to accommodate extra projected population equivalent loading, taking into account potential effects in combination with other WWTP discharges into the Inner Harbour including the Cork City WWTP”*

An assessment of the impacts of the proposed Waste water Treatment Plant (WWTP), including discharges to the receiving waters, has been included in Environmental Impact Statement (EIS) for the Cork Lower Harbour Sewerage Scheme. Relevant information has been extracted and included in the sections below to demonstrate the positive effects of the proposed waste water treatment plant.

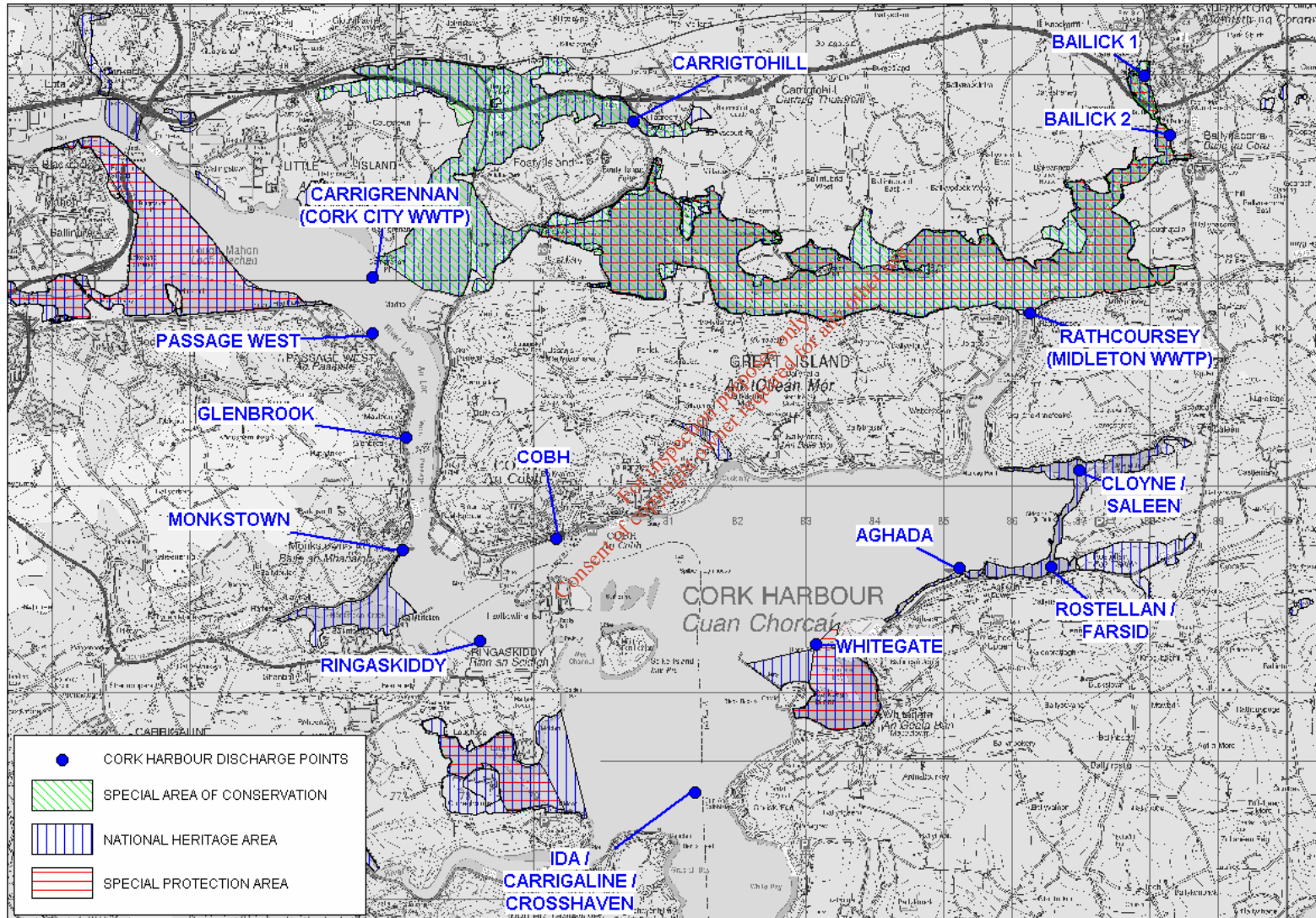
A report was completed for Cork County Council in November 2007 relating to modelling Norovirus contamination in Cork Harbour. The report compiled a list of the treated and untreated discharges to the harbour. These are tabulated below and included indicatively on a drawing overleaf.

**Table F1.1.1 – List of Discharges to Cork Harbour**

Location	Treatment	Location	Treatment
Cork City – Carrigrennan	Secondary	Passage West/ Glenbrook/ Monkstown	None
Midleton	Secondary	Whitegate/ Agahda	None
Carrigtohill	Secondary	Ringaskiddy	None
Cloyne	Secondary	Saleen	None
Carrigaline/ Crosshaven	None	Rostellan/ Farsid	None
Cobh	None	Houses -North Channel	None

The modelling completed for the EIS for the Cork Lower Harbour Sewerage Scheme did not consider the background concentrations of coliforms, nitrogen, etc but modelled the improvement in water quality due to the provision of the waste water treatment plant on the existing untreated discharges at Carrigaline/Crosshaven, Cobh, Passage West/ Glenbrook/ Monkstown and Ringaskiddy.

Figure F1.1 – Existing Treated and Untreated Discharges to Cork Harbour.



The proposed WWTP will initially be sized for a population equivalent (P.E.) of 50,000. The plant will allow for further expansion to 80,000 P.E., the estimated loading for the year 2030. The discharge standards for the treatment plant are:

- < 25 mg/l BOD
- < 125 mg/l COD
- < 35 mg/l SS

The 2001 loading on the harbour from the untreated discharges of the agglomerations of Carrigaline/Crosshaven, Cobh, Passage West/ Glenbrook/ Monkstown and Ringaskiddy has been estimated as:

**Table F1.1.2 – Estimated Untreated Discharge Loadings (2001)**

Parameter	Cobh	Passage West & Monkstown	Ringaskiddy Shanbally & Coolmore	Carrigaline	Crosshaven	Total
Flow (m <sup>3</sup> /day)	> 2,776	> 1,919	273	6,105	448	> 11,521
BOD (kg/day)	832	371	86	978	139	2,406
Ss (kg/day)	971	433	100	1,745	162	2,811
Pop. Equiv.	13,865	6,189	1,426	16,305	2,317	40,102

The estimated loading on the treatment plant by the year 2030 has been estimated as:

**Table F1.1.3 – Estimated Loading on WWTP – Year 2030**

Parameter	Cobh	Passage West & Monkstown	Ringaskiddy Shanbally & Coolmore	Carrigaline	Crosshaven	Total
Flow (m <sup>3</sup> /day)	5,083	2,789	329	6,478	761	14,841
BOD (kg/day)	1,621	689	108	2,138	243	4,799
Ss (kg/day)	4,030	803	125	2,493	283	7,734
Pop. Equiv.	27,020	11,478	1,798	35,636	4,050	79,982

The predicted 2030 flow rate of 14,841 m<sup>3</sup>/day equates to a treated discharge of 371 kg/day BOD. Untreated sewage is estimated to average 60g BOD per person per day. Therefore the treated discharge at the 2030 population estimate is equivalent to an untreated discharge of 6,180 P.E. (BOD). By comparison, the 2006 Census records the population of Passage West as 5,203.

The current untreated discharge from Crosshaven and Carrigaline to the existing IDA outfall discharging at the Dognose Bank (i.e. the proposed outfall for the Cork Lower Harbour Waste water Treatment Plant) was estimated, based on 2001 figures, at 26,449 P.E.

### F.1.1.2 TERRESTRIAL AND MARINE ECOLOGY

A terrestrial and marine ecology assessment and report was prepared by Ecofact Environmental Consultants Ltd. to address the potential impacts of the proposed WWTP and upgraded collection system on the ecology of the receiving environment. The terrestrial and marine ecology report is presented in full in Volume 2, Appendix 2A, and has been summarised as Section 3 - Receiving Environment, Sub Section 3.2 Terrestrial and Marine Ecology, of Volume 1 of the EIS.

Section 3.2.4 of the terrestrial and marine ecology assessment dealt with the impacts of the proposed scheme, and concluded that with correct mitigation measures the construction impacts would be minimal. The report further concluded, in relation to the operational phase impacts:

*“Current nutrient inputs by foul water outfalls into the affected aquatic areas would be significantly reduced during the operation of the proposed scheme. Such inputs result in increased primary production and turbidity, indirectly suppressing filter feeder activity. Phytoplankton blooms are expected to be less frequent with the expected reduction in nutrient loading due to the proposed development and restrictions on the edibility of shellfish would ease considerably due to the reduction in associated biotoxins. Water quality around the shorelines within the Harbour and along the Owenboy Estuary is expected to improve, encouraging an increase in diversity of infauna (polychaete worms, bivalves, etc.) and epifauna (crabs, crustaceans, snails, etc.).”*

*“The reduction of nutrients into the affected aquatic areas would improve water quality, habitats and diversity, and consequently add to the conservation status of Cork Harbour SPA, Owenboy River pNHA and Monkstown Creek pNHA.”*

### F.1.1.3 WATER QUALITY

A computer model of the receiving waters was also developed for the scheme and the results are included in Volume 2 of the EIS as Appendix 3A. The model estimates the relative changes to the quality of the receiving waters of the provision of the treatment plant, relative to the existing untreated discharges, excluding background concentrations of the modelled substances. Hence the model demonstrates the positive impact of the provision of the treatment plant on the receiving waters.

The model concluded that, for both 2010 & 2030 population projections that provision of the treatment plant would lead to a reduction in levels of faecal coliforms by between 80 and 95%, depending on the location within the study area.

The computer model was also used to estimate the effects of nitrogen on the receiving waters by modelling organic nitrogen, ammonia and nitrate. The results of the modelling are discussed in detail in Chapter 6 of the Appendix.

The provision of the treatment plant shows considerable reductions in the predicted nitrogen levels in the Lough Mahon (designated sensitive waters) and in the North Channel. It also leads to improvement of the waters in the Outer Harbour.



#### **F.1.1.4 CONCLUSIONS**

The terrestrial and marine ecology assessment and report prepared by Ecofact Environmental Consultants Ltd concluded that the provision of the waste water treatment plant would improve water quality, habitats and diversity, and consequently add to the conservation status of Cork Harbour SPA, Owenboy River pNHA and Monkstown Creek pNHA.

The conclusions of the modelling report are included as Chapter 7 of the Appendix. The model used was extremely conservative, yet showed a significant decrease in coliform levels when compared with the untreated discharges. Areas including Lough Mahon, the Inner Harbour, East & West Passages and Ringaskiddy show a 95% reduction in coliform levels. Elsewhere the reduction is modelled as 80%.

A less conservative model, based on 98% efficiency of the treatment plant (the efficiency currently achieved by the Midleton plant) would lead to reductions in coliforms concentrations of between 96 and 99% when compared with the untreated discharges.

The model also showed a marked reduction in the levels of Nitrogen as organic nitrogen, ammonia and nitrate within the study area, particularly in the predicted nitrogen levels in the Lough Mahon (designated sensitive waters) and in the North Channel. The provision of the proposed treatment plant will have a significant positive influence on the trophic status of the receiving waters.

The loading on the receiving waters from the treated waste water discharged to the harbour at the 2030 population prediction of 80,000 P.E. will be similar to that from the untreated discharge from Passage West in 2006.

#### **F.1.1.5 SUMMARY**

The proposal for the plant has adequate capacity to cater for future population increases. The provision of the plant will not have an adverse impact on the Cork Harbour SPA. The provision of the Waste water Treatment Plant at Shanbally, combined with the elimination of other untreated discharges through the provision of additional waste water treatment plants in the East of the Harbour, will result in a significant improvement in the water quality within the Lower Harbour, and add to the conservation status of Cork Harbour SPA, Owenboy River pNHA and Monkstown Creek pNHA.

## F.1.2 Proposed Waste Water Discharge and its effect on Cork Harbour

### F.1.2.1 BACKGROUND

The National Parks & Wildlife Service have suggested that “the proposed Waste water discharge is considered likely to have significant adverse effects on a European site” because of uncertainty associated with the discharge due to:

*“Industrial and other discharges potentially leading to elevated concentrations of heavy metals and persistent organic compounds, which can bioaccumulate and have ecotoxicological effects of bird populations; on the following qualifying habitats and species:*

*Black-tailed godwit (overwintering);*

*Redshank (overwintering);*

*Curlew (overwintering);*

*Regularly occurring migratory bird wintering assemblage;”*

An assessment of the impacts of the proposed Waste water Treatment Plant (WWTP), including discharges to the receiving waters, has been included in Environmental Impact Statement (EIS) for the Cork Lower Harbour Sewerage Scheme. Relevant information has been extracted and included in the sections below to demonstrate the positive effects of the proposed WWTP.

The assessment included reference to the Department of the Marine Shellfish monitoring programme in relation to heavy metal concentrations but did not address the effect of the treatment plant on the concentrations of heavy metals in the harbour, or the bioaccumulation of persistent organic compounds. These are considered in the sections below.

### F.1.2.2 PROPOSED WASTE WATER DISCHARGES

As highlighted in a previous response, the proposed WWTP will initially be sized for a population equivalent (P.E.) of 50,000. The plant will allow for further expansion to 80,000 P.E., the estimated loading for the year 2030. The discharge standards for the treatment plant are:

- < 25 mg/l BOD
- < 125 mg/l COD
- < 35 mg/l SS

The predicted 2030 flow rate of 14,841 m<sup>3</sup>/day equates to a treated discharge 6,180 P.E. (BOD). By comparison, the 2006 Census records the population of Passage West as 5,203.

The current untreated discharge from Crosshaven and Carrigaline to the existing IDA outfall discharging at the Dognose Bank (i.e. the proposed outfall for the Cork Lower Harbour WWTP) was estimated, based on 2001 figures, at 26,449 P.E.

### F.1.2.3 EXISTING STUDIES

#### F.1.2.3.1 IRISH MARINE INSTITUTE

The Marine Institute monitors the levels of priority hazardous substances in shellfish from selected sites around the Irish coast on an annual basis. This monitoring programme is undertaken to comply with the requirements of EU legislation and to contribute to the Joint Assessment and Monitoring Programme required by the 1994 OSPAR convention. The following are extracts from Marine Institute publications:

*“European Regulation 466/2001/EC came into effect on 5th April 2002. It sets maximum levels for mercury, lead and cadmium in foodstuffs, including bivalve mussels. While the monitoring presented here was carried out prior to the adoption of this regulation, results are compared with the values set in the regulation.”*

*“There are no internationally agreed standards or guidelines for copper, chromium, zinc or chlorinated hydrocarbons in shellfish for human consumption. However there is a compilation of standard and guidance values for contaminants in shellfish, applied by Contracting Parties to OSPAR (Anon 1992). Samples analysed here are compared with these values. None of the countries have set guidance values or standards for chromium in shellfish.”*

The results of the Marine Institute Studies including Trace Metal and Chlorinated Hydrocarbon Concentrations in Shellfish from Irish Waters 1997 – 2002 and Trace Metal Concentrations in Shellfish from Irish Waters 2003 – 2005 are available from the National Food Residue Data <http://nfrd.teagasc.ie/>

These studies have included examination of concentrations of pollutants in oysters in Cork Harbour, and are summarised in Table F1B1 of this report. All samples were below permissible levels. It is worth noting that after 2002 the levels of Chlorinated Hydrocarbons, PCBs and Pesticides which had been tested for in earlier surveys were below the limits of detection. This is coincidental, although not necessarily attributable to, with the provision of the Cork City WWTP.

**Table F1B1 – Trace Metal and Chlorinated Hydrocarbon Concentrations in Shellfish from Irish Waters 1997-2002 & Trace Metal Concentrations in Shellfish from Irish Waters 2003-2005 in Edible Tissue of oysters in Cork Harbour, 25 samples per annum**

Residue	Units	1997	1998	1999	2000	2001	2002	2003	2005
		Residue Concentration							
Cadmium	mg/kg (ppm) wet wt.	0.19	0.26	0.32	0.25	0.23	0.29	0.16	0.12
Chromium	mg/kg (ppm) wet wt.	0.1	0.14	0.31	0.19*	0.23	0.19	0.22	0.14
Copper	mg/kg (ppm) wet wt.	10.9	23.9	22.6	11.4	11.1	24.8	7.37	8.62
Lead	mg/kg (ppm) wet wt.	0.23	0.15	0.08	0.25	0.45	0.12	0.29	0.21
Mercury	mg/kg (ppm) wet wt.	0.03	0.03	0.03	0.03	0.03*	0.03	0.04	0.04
Nickel	mg/kg (ppm) wet wt.					0	-	-	0.13*
Silver	mg/kg (ppm) wet wt.					0	1.21	0.3	0.33
Zinc	mg/kg (ppm) wet wt.	157	270	286	169	165	437	202	162
PCB-028	ug/kg (ppb) wet wt.	0.49	0.82	0.51	0.39	0	0.06		



		1997	1998	1999	2000	2001	2002	2003	2005
Residue	Units	Residue Concentration							
PCB-031	ug/kg (ppb) wet wt.	0.5	0.79	0.09	0.39	0	0.06		
PCB-052	ug/kg (ppb) wet wt.	0.83	1.61	0.74	0.79	0	0.13		
PCB-101	ug/kg (ppb) wet wt.	0.96	1.37	0.85	1.07	1.1	0.53		
PCB-105	ug/kg (ppb) wet wt.	0.22	-	-	-	0.18	0.11		
PCB-118	ug/kg (ppb) wet wt.	0.7	1.24	0.82	0.64	0.63	0.47		
Pcb-138	ug/kg (ppb) wet wt.	0.92	1.34	1.09	0.61	1.17	0.62		
Pcb-153	ug/kg (ppb) wet wt.	1.57	1.9	1.49	1.53	1.18	1.12		
Pcb-156	ug/kg (ppb) wet wt.	0.05	0.07	0.05*	0.06*	0.03	0.02*		
Pcb-180	ug/kg (ppb) wet wt.	0.13	0.22	0.15	0.11	0.04	0.01*		
Aldrin	ug/kg (ppb) wet wt.					-			
Cis-Chlordane	ug/kg (ppb) wet wt.	0.06*	0.06*	-	0.03	0.04	0.01**		
Dieldrin	ug/kg (ppb) wet wt.	0.83	0.97	2.31	0.12	0	0.54		
Endrin	ug/kg (ppb) wet wt.					0.09	0.05*		
Hexachlorobenzene	ug/kg (ppb) wet wt.	0.24	0.05	0.09	0.07	0.03*	0.01*		
Hexachlorohexane-alpha (HCH-alpha)	ug/kg (ppb) wet wt.	0.09	0.07	0.04		0	0.12		
Hexachlorohexane-beta (HCH-beta)	ug/kg (ppb) wet wt.					0	0.17*		
Isodrin	ug/kg (ppb) wet wt.					0.03*			
Lindane (HCH-gamma)	ug/kg (ppb) wet wt.	-	0.22	0.26	0.43	0.47	0.04		
op' DDT	ug/kg (ppb) wet wt.				0.04	0	0.01*		
pp' DDD	ug/kg (ppb) wet wt.	0.42	0.87	0.48	0.39	0.31	0.21		
pp' DDE	ug/kg (ppb) wet wt.	1.33	2.4	0.91	1.39	1.3	0.76		
pp' DDT	ug/kg (ppb) wet wt.	0.06	0.54	0.24	0.1	0.34	0.11*		
Trans-Chlordane	ug/kg (ppb) wet wt.		-	-	0.05	0.04	0.04		
Trans-nonachlor	ug/kg (ppb) wet wt.			0.04	0.07	0.09			

\*Residue Concentration is below the Limit of Quantisation

**Table F1B1 – Trace Metal and Chlorinated Hydrocarbon Concentrations in Shellfish from Irish Waters 1997-2002 & Trace Metal Concentrations in Shellfish from Irish Waters 2003-2005 in Edible Tissue of oysters in Cork Harbour, 25 samples per annum**

### F.1.2.3.2 ENVIRONMENTAL PROTECTION AGENCY

The following are extracts from Water Quality in Ireland 2004-2006 published by the EPA:

*“MONITORING OF TOXIC CONTAMINANT LEVELS IN ESTUARINE AND COASTAL WATERS*

*The Marine Institute monitors the levels of priority hazardous substances in a range of commercial fish species landed at Irish ports and also in shellfish from selected sites around the Irish coast. These are substances, such as mercury, that have been identified as being of particular concern to the marine environment and to consumers of seafood. Levels of such substances in fish and shellfish are a good indicator of contamination in the marine environment as a whole. Inter alia, the monitoring is part of Ireland’s contribution to the Joint Assessment and Monitoring Programme (JAMP) of the OSPAR Convention.”*

*“Environmental Contaminants in Shellfish*

*Concentrations of environmental contaminants such as metals, hydrocarbons and persistent organic pollutants in bivalve molluscs are very good indicators of ambient water quality with respect to these parameters. The Marine Institute monitors contaminants in mussels and oysters from shellfish growing waters but supplements this with additional samples from areas where shellfish are not harvested to give a more representative picture of the status of waters along the Irish coast.”*

*“Seawater samples were collected from the 14 designated shellfish areas twice annually and analysed for trace metals and organochlorines. All organohalogenes (PCBs and pesticides) results were below limits of detection (Marine Institute, 2007). The metal results varied substantially as would be expected for seawater samples, and a number of samples exceeded current Irish standards (Water Quality (Dangerous Substances) Regulations (S.I. No. 12 of 2001)). Individual results do not in themselves imply a breach as these standards apply as annual average concentrations. However, no samples exceed the Imperative values (maximum allowable concentrations) for shellfish waters as set out in SI 268 of 2006.”*

**F.1.2.3.3 ENVIRONMENTAL RESEARCH INSTITUTE, UNIVERSITY COLLEGE CORK**

University College Cork completed a number of studies as part of the VITOX/BIOMASSTOX projects. These included “An assessment of the pollutant status of surficial sediment in Cork Harbour in the South East of Ireland with particular reference to polycyclic aromatic hydrocarbons”

The assessment, [http://zae.ucc.ie/biomasstox/Kilemade%20et%20al%20\(2004\).pdf](http://zae.ucc.ie/biomasstox/Kilemade%20et%20al%20(2004).pdf), examined the pollution concentrations of heavy metals, PHAs, PCBs, OCPs, BFRs and organotins in surficial, inter-tidal sediments at 3 points within Cork Harbour with the results for the sites compared to a “clean” site at Ballymacoda outside the harbour. Figure 1 of the report which shows the test sites is included overleaf.

The assessment together with additional studies completed by UCC (available at <http://zae.ucc.ie/biomasstox/>) on the effects of the toxic compound discovered in the sediment on clams and turbot concluded that Cork Harbour is polluted principally with PHAs on a scale comparable to levels determined previously for both western and eastern Irish Sea sediments, and that “levels of PCBs, OCPs, BFRs and organotins were on the whole quite low, with the majority of the individual compounds being on or below the detection limit of the method.”

Of the 3 sites within Cork Harbour, Whitegate, Aghada and Douglas, the site at Douglas was significantly more polluted than the other sites. The sum of PHAs in Douglas was 3 times that of the other sites and > 5 times that of Ballymacoda. By comparison the sum of PHAs in Whitegate and Aghada was less than twice that of the Ballymacoda.

The Douglas site also showed moderately elevated levels of heavy metals.

The reports note:

*“Many sources may contribute to sediment PAHs. The relatively constant abundance of most of the PAHs at all sites, together with the special PAH compound ratios, has demonstrated that the sediments owed their PAH loading to a predominantly single mode of origin, i.e. anthropogenic combustion or pyrolysis processes via run-off, industrial and sewage discharges, and atmospheric input rather than petrogenic sources such as oil spills. However, evidence for the input of PAHs from petroleum appeared at one site within Cork Harbour, Whitegate, the site of an oil refinery, which exhibited the highest P/A and Chry/BaA ratios. These indices indicated slight over-impositions of petrogenic inputs into Cork Harbour at the Whitegate site.”*

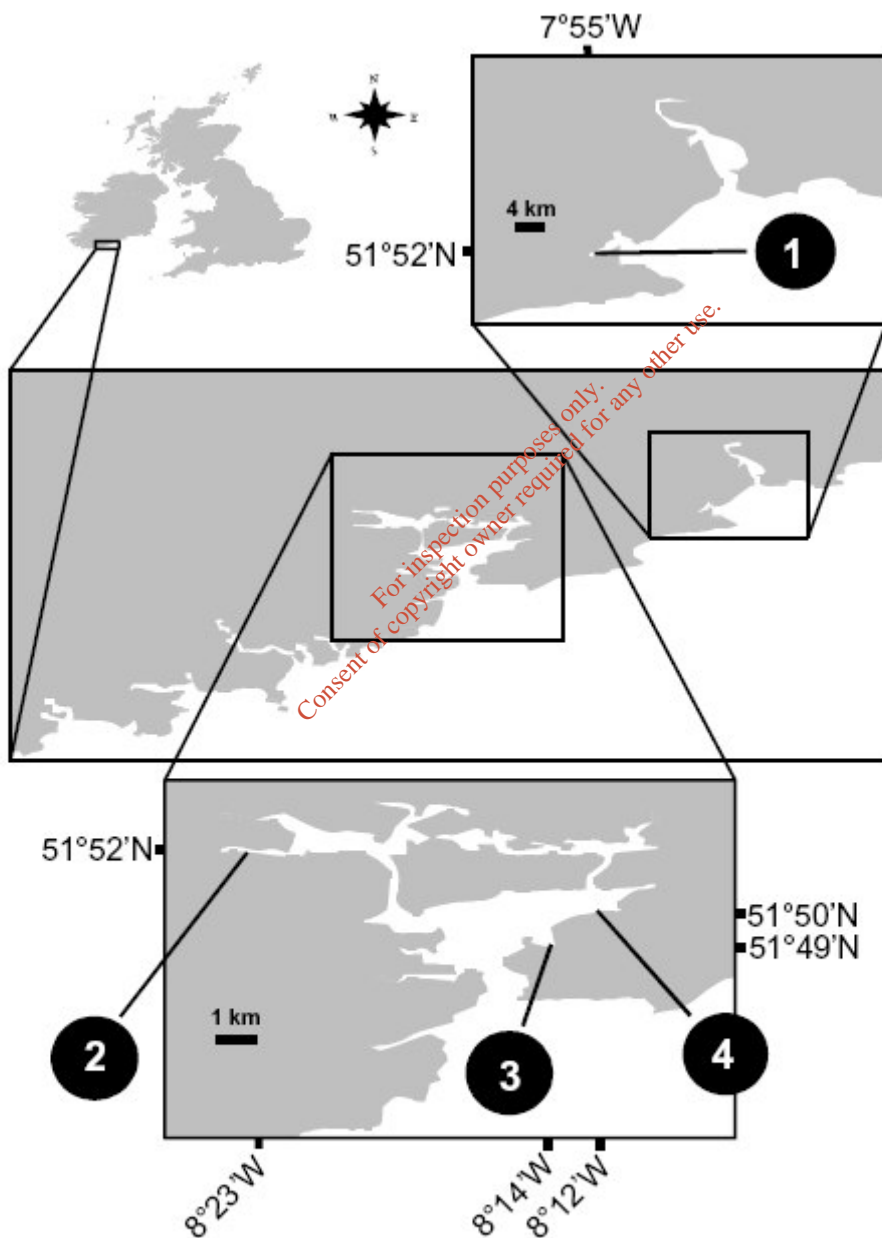


Fig. 1. Map of the sediment sampling sites: (1) Reference site, Ballymacoda and the contaminated sites in Cork Harbour (2) Douglas, (3) Whitegate and (4) Aghada.



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#### F.1.2.4 CONVENTIONAL SEWERAGE TREATMENT & REMOVAL OF HEAVY METALS

“Sewage sludge composition – a multifunctional information” by Vienna University of Technology; Inst. for Water Quality, Resources and Waste Management and available in full at <http://www.bvsde.paho.org/bvsaar/cdlodos/pdf/sewagesludge1003.pdf> examined the reduction in heavy metals for the Vienna WWTP. “The treatment process in the period of the sampling campaign consists of conventional mechanical treatment with primary settling and a secondary treatment with 80% BOD removal only. P-precipitation was conducted by pre-precipitation in the primary settling and simultaneous precipitation in the secondary treatment.” The plant has a daily loading of approximately 550 000 m<sup>3</sup> waste water.

The assessment showed, while the removal efficiency decreased with increasing flow, the following were the removal rates for heavy metals:

*“The removal efficiency of the WWTP is lowest for Zn (58%), followed by Cu (73%) and Cd (67%). 80 to 90% of the Ag-, Hg- and Cr-load are retained in the sludge. The highest removal efficiency was found for Pb (92%) and for Al (> 97%).”*

A similar study, <http://www.springerlink.com/content/a512424m3k328562/fulltext.pdf>, in Brazil showed the percentages of removal efficiency (RE) as:

*“Hg 61.5%, Cd 60.0%, Zn 44.9%, Cu 44.2%, Pb 39.7%, Cr 16,5% and Mn 10.4%”*

A study [http://www.geo.sc.chula.ac.th/Geology/Thai/News/Technique/GREAT\\_2008/PDF/14\\_2.pdf](http://www.geo.sc.chula.ac.th/Geology/Thai/News/Technique/GREAT_2008/PDF/14_2.pdf) of the activated sludge WWTP for Bangkok concluded that the removal of metals was directly proportional to initial metal concentration in the influent. The study gave the order and range of percentage removal efficiency as:

*“Ni (3.6-27.6) < As (6.8-31.7) < Mo (24.0-43.9) < Mn (31.3-66.6) < Zn (36.1-66.0) < Hg (24.9-79.0) < Cd (0.4-87.3) ≤ Cr (3.2-79.5) < Cu (37.3-74.5) < Pb (54.2-78.9) < Fe (80.5-88.3)”*

Health Risk and Environmental Pollution In Relation To Removal Of Heavy Metals By Waste Water Treatment [http://www.isah-soc.org/documents/2005/sections/77\\_vol\\_2.pdf](http://www.isah-soc.org/documents/2005/sections/77_vol_2.pdf) considered the removal of heavy metals in two WWTPs, the second treating urban waste waters from a conglomeration of approx. 100 000 inhabitants with very little proportion of industrial pre-treated waste waters (WWTP-2). Both treatment systems include mechanical and aerobic biological stages. The study concluded that “Approximately 70-75% of Zn, Cu, Cd, Cr, Hg and other metals in raw sewage is removed and transformed to the sludge”

Table F1B2 shows the transfer coefficients for two small treatment plants in Austria, which have been investigated in detail over one year (Zessner 1999).

TP	A, 2-stage ASP ("ts" ~25 d)				B, 1stage ASP (ts ~ 8d)			
	Influent + chemicals for Pprec.		sludge	effluent	influent		sludge	effluent
	g/PE/d	g/Inh/d	%	%	g/PE/d	g/Inh/d	%	%
CSB	110	224	28	7	110	92	43	12
N	8,2	16,7	17	18	1,5	1,3	15	67
P	1,05	2,1	86	14	12,5	10,5	26	74
	mg/PE/d	mg/Inh/ d	%	%	mg/PE/d	mg/Inh/d	%	%
Zn	59	120	51	46	127	106	45	53
Cu	17	34	77	19	15	12,6	56	42
Pb	2,5	5	72	16	3,9	3,2	79	16
Cd	0,13	0,27	53	44	0,19	0,16	38	59
Cr	3	6,1	80	18	3,4	2,9	49	46
Ni	2,5	5,1	68	30	2,9	2,4	34	62
Hg	0,03	0,06	> 46	< 52	0,14	0,11	(55)	(45)

**Table F1B2 – Specific loads in the influent and their distribution to the different end products based on a mass balance over one year**

#### F.1.2.5 CONVENTIONAL SEWERAGE TREATMENT & REMOVAL OF PERSISTENT ORGANIC POLLUTANTS/COMPOUNDS

Persistent organic pollutants (POPs) are organic compounds that are resistant to environmental degradation through chemical, biological, and photolytic processes. They can persist in the environment, are capable of long-range transport, and can bioaccumulate in human and animal tissue.

In May 1995, the United Nations Environment Programme Governing Council began investigating POPs, initially beginning with a short list of aldrin, chlordane, DDT, dieldrin, endrin, heptachlor, hexachlorobenzene, mirex, polychlorinated biphenyls, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, and toxaphene.

A number of studies have investigated the removal of persistent organic pollutants/compounds through conventional sewerage treatment.

One study, <http://www.springerlink.com/content/b61512402715w265/fulltext.pdf>, "The Fate of Dissolved Organic Carbon (DOC) in the Waste water Treatment Process and its Importance in the Removal of Waste water Contaminants" showed the reductions in pollutant levels, following secondary treatment (SSE) compared with the raw water (RW) entering the treatment plant in Table F1B3 overleaf.



**Table F1B3 – Reductions in pollutant levels, following secondary treatment (SSE) compared with the raw water (RW)**

POPs	RW	PSE	SSE
Hexachlorobutadine	ND (4.7)	ND (2.4)	ND (1.2)
Dichlobenil	ND (11)	ND (5.7)	ND (2.8)
Quintozene	20 (4.2)	18 (2.1)	12 (1.1)
Hexachlorobenzene	6.7 (4.7)	3.8 (2.4)	12 (1.2)
$\alpha$ -HCH	23 (6.0)	13 (3.0)	5.8 (1.5)
$\beta$ -HCH	19 (6.5)	4.1 (3.2)	6.1 (1.6)
$\gamma$ -HCH	ND (3.6)	ND (1.8)	ND (0.9)
Isobenzan	ND (10)	ND (5.0)	ND (2.5)
$\alpha$ -Endosulfan	39 (6.0)	17 (3.0)	2.7 (1.5)
Aldrin	ND (6.5)	ND (3.2)	ND (1.6)
Isodrin	ND (4.0)	ND (2.0)	ND (1.0)
Dieldrin	15 (5.5)	12 (2.7)	5.7 (1.4)
Endrin	ND (4.0)	ND (2.0)	2.8 (1.0)
Heptachlor	25 (3.7)	4.3 (1.7)	2.3 (0.9)
Heptachlor-exo-epoxide	110 (5.5)	79 (2.7)	18 (1.4)
Heptachlor-endo-epoxide	ND (5.0)	ND (2.5)	ND (1.2)
p-p'-DDE	2.4 (4.5)	1.3 (2.2)	0.73 (1.1)
p-p'-DDD	9.8 (4.7)	7.8 (2.4)	4.7 (1.2)
p-p'-DDT	ND (7.0)	ND (3.5)	ND (1.7)
PCB-28	2.5 (6.0)	3.6 (3.0)	2.7 (1.5)
PCB-52	210 (4.7)	110 (2.4)	88 (1.2)
PCB-101	140 (10)	72 (5.0)	37 (2.6)
PCB-118	8.6 (6.0)	6.3 (3.0)	4.6 (1.5)
PCB-153	5.7 (4.0)	4.6 (2.0)	0.7 (0.4)
PCB-138	2.7 (4.5)	1.8 (2.2)	1.5 (1.1)
PCB-180	140 (5.5)	140 (2.7)	41 (1.4)

ND: Not detected. The detection limits for individual POPs in wastewater ( $\text{ng l}^{-1}$ ), calculated as signal-to-noise ratio of three, are given in parentheses (Katsyiannis and Samara 2002)

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### **F.1.2.6 CONCLUSIONS**

The Environmental Protection Agency have confirmed that “*Concentrations of environmental contaminants such as metals, hydrocarbons and persistent organic pollutants in bivalve molluscs are very good indicators of ambient water quality with respect to these parameters.*” It is appropriate to take surveys shown existing lack of contamination in Oysters in Cork Harbour into consideration in the assessment of the impact of the proposed WWTP. These surveys do not show elevated pollution levels within the harbour.

#### **F.1.2.6.1 HEAVY METAL CONCENTRATIONS IN CORK HARBOUR**

Cork Lower Harbour is regularly tested for concentrations of heavy metals and it has been concluded by the Department of the Marine, the Environmental Protection Agency and University College Cork that there is not an issue with heavy metals pollution in the harbour. Section F1(B4) above clearly shows that the provision of primary and secondary treatment with a conventional activated sludge process, as with the proposed WWTP at Shanbally, leads to significant reductions in the levels of heavy metals in the treated waste water. This is as a coincidental part of the process as the metal ions, being heavier than water, tend to settle out into the sludge as part of the treatment process.

The provision of the treatment plant will significantly decrease the levels of heavy metals released to the harbour when compared with the current release of untreated sewage. The provision of the WWTP will not have an adverse effect on the Cork Harbour SPA as it will lead to reduced discharge of heavy metals, not the elevated discharge suggested by the NPWS.

#### **F.1.2.6.2 PERSISTENT ORGANIC COMPOUNDS**

As with the concentrations of heavy metals, Cork Lower Harbour is regularly tested for persistent organic pollutants. It has been demonstrated by the Department of the Marine, the Environmental Protection Agency and University College Cork that there is no longer an issue with persistent organic pollutants in the water in the harbour. Since 2002, coincidental with the provision of the Cork City WWTP, the levels of all organohalogenes (PCBs and pesticides) were below limits of detection in the water samples. The study completed in 2004 by UCC of inter-tidal sediments concluded that levels of PCBs, OCPs, BFRs and organotins were on the whole quite low, with the majority of the individual compounds being on or below the detection limit of the method.

The UCC study did however confirm that the harbour does have a pollution issue with the levels of PAHs in the sediment of the harbour on a scale comparable to levels determined previously for both western and eastern Irish Sea sediments. The study also concluded that, with the exception of Whitegate where some PAH concentrations were clearly associated with the oil refinery, the “relatively constant abundance of most of the PAHs at all sites, together with the special PAH compound ratios, has demonstrated that the sediments owed their PAH loading to a predominantly single mode of origin” i.e. the PAHs at the clean site came from the same source as the PAH within the harbour. The actual source could not however be defined.

As Section F1(B5) above demonstrates, the provision of the treatment plant will significantly decrease the levels of for persistent organic pollutants released to the harbour when compared with the release of untreated sewage. The provision of the WWTP will not have an adverse effect on the Cork Harbour SPA as it will lead to reduced discharge of for persistent organic pollutants, not the elevated discharge suggested by the NPWS.

### **F.1.2.7 SUMMARY**

The provision of the proposed WWTP at Shanbally will not have a significant adverse effect on the Cork Harbour SPA. It will in fact have a positive effect on the SPA through the reduction in the levels of heavy metals and persistent organic pollutants/compounds released to the harbour.

The harbour does not currently have an issue with the accumulation of heavy metals or persistent organic compounds (other than PHAs) in the sediment of the harbour. There is no evidence of accumulations of either metals or persistent organic pollutants/compounds in the flesh of shellfish with are tested in the harbour every year.

As it has been demonstrated that the provision of the treatment plant will have a positive effect on the SPA no further investigation is required.

### **F.1.3 MODELLING**

#### **F.1.3.1 DISPERSION MODELLING**

A dispersion modelling report is included as Appendix 3A of Volume 2 of the EIS. As part of the remodelling of the Passage West/Monkstown collection system, the dispersion modelling report included in the EIS and Preliminary Report will be revised to show the effect of the storm water overflows. The revised modelling report will be forwarded separately at a later date.

The discharges from the proposed works will not impair the environment. The response to section F1 above shows the positive benefits of the proposed works.

#### **F.1.3.2 BACKGROUND**

An assessment of the impacts of the proposed discharges on the receiving waters has been included in Volume 1 of the Environmental Impact Statement (EIS) as Section 3 - Receiving Environment, Sub Section 3.3 Water Quality.

A computer model of the receiving waters was developed for the scheme and the results are included in Volume 2 of the EIS as Appendix 3A. The model estimates the relative changes to the quality of the receiving waters of the provision of the treatment plant, relative to the existing untreated discharges, excluding background concentrations of the modelled substances. Hence the model demonstrates the positive impact of the provision of the treatment plant on the receiving waters.

As part of the correspondence with statutory bodies, the following issues were raised, and included in the EIS.

- South Western Regional Fisheries Board
  - physical impacts of waters containing fisheries
  - effects of sediment disturbance, and impact on commercial/amenity fisheries from the marine crossing
  - Impact on shellfisheries
  - Impacts on fish habitats & water quality (chemical & microbiological)
  - Assessment of the potential for untreated effluent to discharge to harbour waters and Monkstown Creek.
  - Nutrient loading effects on Cork Lower Harbour which is periodically affected by phytoplankton blooms.
  - Measures to avoid and prevent pumping station overflow discharges during operation.

These items are addressed in Chapter 2 - Section 2.11 and Chapter 3 - Section 3.1, 3.2 and 3.3.

- Department of Communications, Marine and Natural Resources
  - noise and vibration details should be noted and limited in accordance with relevant legislation
  - specify in the EIS if dredging for the marine crossing is required
  - details to be provided on proposed pipelines in the foreshore incl. timing/duration
  - refer to the designation of Shellfish Waters
  - potential impacts on navigational safety and passage of migratory fish.

These items are addressed in Chapter 3 - Section 3.1, 3.2, 3.3, 3.4 and 3.7.

The Environmental Protection Agency have asked that additional information be provided in relation to:

“The impact assessment of the proposed discharges having regard to the trophic status of the receiving water and the current uses (shellfish, bathing)”

These impacts were addressed in the EIS, as outlined above, and have been summarised in Section F2(2) of this response.

### **F.1.3.3 EXISTING BATHING WATERS & STANDARDS**

The EIS states that “there are no designated bathing areas within the study area, however, Fountainstown beach is a designated bathing area and is located 5.25km from the existing IDA outfall, which is proposed as the sole outfall for discharges from the WWTP.”

Cork Lower Harbour is not designated a sensitive water under the *Bathing Water Regulations* of 1992 however, it is used for recreational purposes. A map showing



the locations of bathing waters used for recreational purposes, but not designated as such, is included in this response.

The Bathing Water Regulations (S.I. No. 155 of 1992) a limit is set of:

- $\leq 1000$  faecal coliforms/100mls in  $\geq 80\%$  of samples
- $\leq 2000$  faecal coliforms/100mls in  $\geq 95\%$  of samples.

Currently the waters of the Lower Harbour are below these limits. The new Bathing Water Directive 2006/7/EC specifies a standard, in a 95-percentile evaluation for excellent quality coastal waters, of:

- $\leq 100$  intestinal enterococci (cfu/100ml)
- $\leq 250$  Escherichia coli (cfu/100ml).

#### **F.1.3.4 EXISTING SHELLFISH WATERS & STANDARDS**

Cork Lower Harbour is not designated as sensitive water under Statutory Instruments S.I. No. 268 of 2006 – European Communities (Quality of Shellfish Waters) Regulations 2006. The regulations specifies a limit in the shellfish flesh and intervalvular liquid of:

- $\leq 300$  Faecal coliforms

Cork Harbour is a shellfish production area (Code CK-CH). This area lies north of a point from Roberts Head to Roches Point up to and including the mean high water mark. In Ireland the main bivalve species are mussels, native and pacific oysters, razorfish, scallops, clams and cockles. Shellfish areas are classified by the microbiological quality of the water. Areas are assigned a classification of A, B or C by the DAFF based on microbiological monitoring.

Table 3.2.5 Designated Bivalve Mollusc Production Areas in Ireland (October, 2005) included in Volume 2 of the EIS lists the shellfish production areas in Cork Harbour based on information contained on the FSAI (Food Safety Authority of Ireland) website. A map showing the locations of these is included as Figure 3.2.5 of the EIS.

#### **F.1.3.5 MODEL OF BACTERIA CONCENTRATIONS**

The computer model of the receiving waters developed as part of the EIS included consideration of Faecal coliforms and Intestinal Enterococci and Escherichia coli in the modelling. The results of the faecal coliform modelling were used to estimate the Intestinal Enterococci and Escherichia coli concentrations. The improvement in conditions due to the provision of the waste water treatment plant have been modelled, not actual concentrations of bacteria as background concentrations were not considered.

The model considered 15 no. specific locations, some but not all of which, coincide with the locations identified as bathing waters within the Lower Harbour Area. The

model locations are tabulated below and included in Chapter 4 - Figure 4.13 of Appendix 3A of the EIS.

**Table F21 – List of locations used to model bacteria concentrations**

Fountainstown	Shoreline closest to Outfall	Oyster Farm – Outer Harbour
Myrtleville	Spike Island	Marlogue Point
Roches Point	Ringaskiddy Ferry	Oyster Farm – North Channel
Crosshaven	Monkstown Creek	West Passage
200m upstream of Outfall*	Cobh	Lough Mahon

\* This point is just outside the near field mixing zone.

The model concluded that, for both 2010 & 2030 population projections that provision of the treatment plant would lead to a reduction in levels of faecal coliforms by between 80 and 95%, depending on the location within the study area. The points with the lowest concentrations at Fountainstown and the oyster farm in the North Channel.

Concentrations of Intestinal Enterococci were modelled giving a maximum of 27.44 cfu/100ml at a location 200m North of the proposed outfall based on 2030 population estimates. Concentrations of Escherichia coli at this location would be expected to be the same as the concentrations of faecal coliforms.

With the exception of the area immediately surrounding the outfall the maximum concentrations of Escherichia coli are modelled at less than 250 cfu/100ml, the average concentrations at this location were modelled at 76.3 cfu/100ml. Further details of the predicted concentrations are included in Tables 4-9 and 4-10 and Sections 4.5, 4.6 and 4.7 of Chapter 4 of Appendix 3A.

It can be concluded that the provision of the Waste water Treatment Plant at Shanbally will result in a significant improvement in the water quality within the Lower Harbour, improving the potential for use for recreation and shellfish farming.

### **F.1.3.6 TROPHIC STATUS**

The computer model was also used to estimate the effects of nitrogen on the receiving waters by modelling organic nitrogen, ammonia and nitrate. The results of the modelling are discussed in detail in Chapter 6 of the Appendix. As with the bacteria modelling, the results have been presented for the 15 locations tabulated in Section F2(2.3) above.

The reduction in concentrations of the various forms of Nitrogen are included in Tables 6-2 to 6-4 with spatial mapping demonstrating the reduced concentrations included as Figures 6-17 to 6-20 of the Appendix to the EIS.

The provision of the treatment plant shows considerable reductions in the predicted nitrogen levels in the Lough Mahon (designated sensitive waters) and in the North Channel. It also leads to improvement of the waters in the Outer Harbour.

### **F.1.3.7 CONCLUSIONS**

The conclusions of the modelling report are included as Chapter 7 of the Appendix, and are summarised below. It should be noted that

- 1) The concentrations of Faecal Coliforms in the raw sewage were assumed to be 4.5 times greater than those used for a similar study in Galway.
- 2) The assumed efficiency of bacteria removal for the treatment plant used in the model is 90%, the efficiency of the existing plant in Midleton is in the region of 98%.
- 3) 98% removal of bacteria would lead to a treated concentration of 5 times less than the concentration assumed for the model purposes.
- 4) The model is therefore extremely conservative. A less conservative model, based on 98% efficiency would lead to reductions in coliforms concentrations of between 96 and 99% when compared with the untreated discharges.

#### **F.1.3.7.1 FAECAL COLIFORMS**

The proposed treatment plant will reduce the number of faecal coliforms in Cork Harbour and the waters outside Roches point.

- The untreated discharge has been modelled giving concentrations of between 2 and 1500 cfu/100ml
- The treated discharge has been modelled giving concentrations of between 2 and 400 cfu/100ml
- The average untreated concentration modelled as 140 cfu/100ml is reduced to 40 cfu/100ml
- Areas including Lough Mahon, the Inner Harbour, East & West Passages and Ringaskiddy show a 95% reduction in coliform levels. Elsewhere the reduction is modelled as 80%.

#### **F.1.3.7.2 ESCHERICHIA COLI**

The proposed treatment plant would lead to reductions in concentrations of Escherichia coli of the same magnitude as those outlined in 4.1 above for Faecal Coliforms.

#### **F.1.3.7.3 INTESTINAL ENTEROCOCCI**

The proposed treatment plant, at the conservative model, would lead to reductions in concentrations of Intestinal Enterococci to levels several orders of magnitude lower than those required by Bathing Water Directive 2006/7/EC. The levels of Intestinal Enterococci associated with a less conservative model have not been predicted, but would be, as with the results for Faecal Coliforms and Escherichia coli, significantly less than those predicted by the model.

#### **F.1.3.7.4 TROPHIC STATUS**

The model shows a marked reduction in the levels of Nitrogen as organic nitrogen, ammonia and nitrate within the study area, particularly in the predicted nitrogen levels in the Lough Mahon (designated sensitive waters) and in the North Channel. The

provision of the proposed treatment plant will have a significant positive influence on the trophic status of the receiving waters.

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# Attachment G.1. Capital Investment Programme

## Cork County

### Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 cont'd.	W/S	Est. Cost
<b>Cork North</b>			<b>Cork South</b>		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballingligg Sewerage Scheme (Upgrade) (G)	S	22,248,000
			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS) (G)	S	73,542,000
<b>Cork South</b>			Shamagarry/Garrywool/Ballyodan Sewerage Scheme	S	3,780,000
Ballycurney/ Ballymaekery Sewerage Scheme	S	3,049,000	Youghal Sewerage Scheme	S	14,420,000
Cobh/ Midleton/ Carrigrohilly Water Supply Scheme	W	10,135,000			
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	<b>Cork West</b>		
Cork Water Strategy Study (G)	W	941,000	Ballydohob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Cronakilly Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmacsherry/ Timoleague Sewerage Scheme	S	2,472,000
<b>Schemes to start 2007</b>			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
<b>Cork North</b>			<b>Service Land Initiative</b>		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kibrin)	S	5,150,000	<b>Cork North</b>		
<b>Cork West</b>			Ballydough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballydooley Improvement Scheme	W/S	139,000
		25,150,000	Broggilly-Rathgoggin Sewerage Scheme	S	405,000
<b>Schemes to start 2008</b>			Bweeng Water Supply Scheme	W	115,000
<b>Cork North</b>			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinter Regional Water Supply Scheme (H)	W	8,652,000	Condulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	5,408,000	Freemount Sewerage Scheme	S	150,000
<b>Cork South</b>			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballingligg Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathgoggin Sewerage Scheme (incl. Water)	W/S	535,000
Ballingear Sewerage Scheme	S	1,296,000	Ros Gully Sewerage Scheme	S	735,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Upland Farmoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	2,000,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghros Sewerage Scheme (Upgrade)	S	823,000	<b>Cork South</b>		
Coashford Water Supply Scheme	W	1,434,000	Ballingligg Sewerage Scheme (Bany's Rd Foulard Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgodey Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscurr Water Treatment Plant Extension Phase 1	W	2,678,000	Bantry Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigrohilly Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
<b>Cork West</b>			Castlemartyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dipsay Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glourthene Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Irishannon Sewerage Scheme	S	277,000
		61,137,000	Irishannon Wastewater Treatment Plant	S	694,000
<b>Schemes to start 2009</b>			Kerrypike Sewerage Scheme	S	832,000
<b>Cork North</b>			Kerrypike Water Supply Scheme	W	416,000
Banteen/Dromahane Regional Water Supply Scheme	W	1,576,000	Kilbegh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Kilbegh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Kilbena Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Milstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,030,000



## Cork County contd.

### Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning contd.	W/S	Est. Cost
<b>Cork South contd.</b>			<b>Cork South</b>		
Mogely Castlemarye & Ladsbridge Water Supply Scheme	W	2,566,000	Carriewhill Sewerage Scheme (G)	S	20,000,000
North Cdh. Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Rivestick Water Supply Scheme (Ind. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballinoolig & Chetwind) (G)	W	8,500,000
Rohestown Water Supply Scheme	W	2,700,000	Intracama Water Treatment Plant (Sludge Treatment)(G/W)		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
<b>Cork West</b>			<b>Cork West</b>		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,787,000	Cape Clear Water Supply Scheme	W	1,679,000
<b>Rural Towns &amp; Villages Initiative</b>			Castletownbere Regional Water Supply Scheme		
			Glenamiff Sewerage Scheme	S	2,500,000
<b>Cork North</b>			Roscarberry/Owenahinchu Sewerage Scheme		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000			95,646,000
<b>Cork South</b>			<b>Water Conservation Allocation</b>		
Imishammon (Ballinacoe/Ballinspittle/Garretstown) Water Supply Scheme	W	6,726,000			12,206,000
<b>Cork West</b>			<b>Asset Management Study</b>		
					300,000
Ballydy Sewerage Scheme	S	2,153,000	South Western River Basin District (WFD) Project <sup>1</sup>		
Baltimore Sewerage Scheme	S	3,162,000			9,400,000
Castletownbere Sewerage Scheme	S	5,202,000	<b>Programme Total</b>		
Schull Sewerage Scheme	S	3,523,000			<b>485,489,000</b>
		<b>24,550,000</b>			
<b>Schemes to Advance through Planning</b>					
<b>Cork North</b>					
Milchtstown North Galtees Water Supply Scheme	W	3,620,000			
Milchtstown Sewerage Scheme	S	3,460,000			
Newmarket Sewerage Scheme	S	3,152,000			

<sup>1</sup> 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

# Attachment G.3 Capital Investment Programme

## Cork County

### Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost	Schemes to start 2009 cont'd.	W/S	Est. Cost
<b>Cork North</b>			<b>Cork South</b>		
Mitchelstown Sewerage Scheme (Nutrient Removal)	S	221,000	Ballingligg Sewerage Scheme (Upgrade) (G)	S	22,248,000
			Cork Lower Harbour Sewerage Scheme (excl. Crosshaven SS) (G)	S	73,542,000
<b>Cork South</b>			Shamagarry/Garrywool/Ballyodan Sewerage Scheme	S	3,780,000
Ballycurney/ Ballymaekery Sewerage Scheme	S	3,049,000	Youghal Sewerage Scheme	S	14,420,000
Cobh/ Midleton/ Carrigrohilly Water Supply Scheme	W	10,135,000			
Cork Lower Harbour Sewerage Scheme (Crosshaven SS) (G)	S	4,850,000	<b>Cork West</b>		
Cork Water Strategy Study (G)	W	941,000	Ballydohob Sewerage Scheme	S	683,000
Kinsale Sewerage Scheme	S	20,000,000	Bantry Water Supply Scheme	W	14,935,000
Midleton Sewerage Scheme (Infiltration Reduction) (G)	S	2,078,000	Cronakilly Sewerage Scheme (Plant Capacity Increase)	S	3,677,000
		41,274,000	Courtmaashery/ Timoleague Sewerage Scheme	S	2,472,000
<b>Schemes to start 2007</b>			Dunmanway Regional Water Supply Scheme Stage 1	W	12,669,000
					164,629,000
<b>Cork North</b>			<b>Service Land Initiative</b>		
North Cork Grouped DBO Wastewater Treatment Plant (Buttevant, Doneraile & Kibrin)	S	5,150,000	<b>Cork North</b>		
<b>Cork West</b>			Ballydough Water Supply Scheme	W	139,000
Skibbereen Sewerage Scheme	S	20,000,000	Ballydooley Improvement Scheme	W/S	139,000
		25,150,000	Broggilly-Rathgoggin Sewerage Scheme	S	405,000
<b>Schemes to start 2008</b>			Bweeng Water Supply Scheme	W	115,000
<b>Cork North</b>			Churchtown Sewerage Scheme (incl. Water)	W/S	543,000
Mallow/ Ballyvinter Regional Water Supply Scheme (H)	W	8,652,000	Condulane Sewage Treatment Plant	S	417,000
Mallow Sewerage Scheme (H)	S	5,408,000	Freemount Sewerage Scheme	S	150,000
<b>Cork South</b>			Pike Road Sewerage Scheme (incl. Water)	W/S	2,080,000
Ballingligg Sewerage Scheme (Nutrient Removal) (G)	S	948,000	Rathgoggin Sewerage Scheme (incl. Water)	W/S	535,000
Ballingeary Sewerage Scheme	S	1,296,000	Ros Gully Sewerage Scheme	S	735,000
Bandon Sewerage Scheme Stage 2	S	14,729,000	Uppalton Farmoy Sewerage Scheme (incl. Water)	W/S	1,174,000
City Environs (CASP) Strategic Study (G)	S	2,000,000	Watergrasshill Water Supply Scheme (incl. Sewerage) (G)	W/S	4,151,000
Cloghros Sewerage Scheme (Upgrade)	S	823,000	<b>Cork South</b>		
Coashford Water Supply Scheme	W	1,434,000	Ballingligg Sewerage Scheme (Bany's Rd Foulard Storm Drainage) (G)	S	1,164,000
Garretstown Sewerage Scheme	S	2,153,000	Belgrosley Water Supply Scheme (incl. Sewerage)	W/S	2,913,000
Inniscaura Water Treatment Plant Extension Phase 1	W	2,678,000	Bantry Water Supply Scheme (Ext. to Station Rd) (G)	W	416,000
Little Island Sewerage Scheme (G)	S	2,200,000	Carrigrohilly Sewerage Scheme (Treatment and Storm Drain) (G)	S	7,632,000
<b>Cork West</b>			Castlemartyr Wastewater Treatment Plant Extension	S	1,200,000
Bantry Sewerage Scheme	S	7,148,000	Crookstown Sewerage Scheme (incl. Water)	W/S	1,200,000
Dunmanway Sewerage Scheme	S	2,153,000	Dipsay Water Supply Scheme (incl. Sewerage)	W/S	1,112,000
Leap/ Baltimore Water Supply Scheme	W	6,365,000	Glourthene Sewerage Scheme (G)	S	1,576,000
Schull Water Supply Scheme	W	5,253,000	Irishannon Sewerage Scheme	S	277,000
		61,137,000	Irishannon Wastewater Treatment Plant	S	694,000
<b>Schemes to start 2009</b>			Kerrypike Sewerage Scheme	S	832,000
<b>Cork North</b>			Kerrypike Water Supply Scheme	W	416,000
Banteen/Dromahane Regional Water Supply Scheme	W	1,576,000	Kilbegh Wastewater Treatment Plant Extension	S	1,200,000
Conna Regional Water Supply Scheme Extension	W	2,627,000	Kilbegh Water Supply Scheme (includes Sewerage)	W/S	485,000
Cork NE Water Supply Scheme	W	4,326,000	Kilbena Sewerage Scheme	S	420,000
Cork NW Regional Water Supply Scheme	W	6,046,000	Kinagleary Sewerage Scheme	S	694,000
Milstreet Wastewater Treatment Plant (Upgrade)	S	1,628,000	Midleton Wastewater Treatment Plant Extension	S	4,030,000



## Cork County contd.

### Water Services Investment Programme 2007 - 2009

Serviced Land Initiative contd.	W/S	Est. Cost	Schemes to Advance through Planning contd.	W/S	Est. Cost
<b>Cork South contd.</b>			<b>Cork South</b>		
Mogely Castlemarye & Ladsbridge Water Supply Scheme	W	2,566,000	Carriwohill Sewerage Scheme (G)	S	20,000,000
North Cdh. Sewerage Scheme (G)	S	3,193,000	Cork Sludge Management (G)	S	14,420,000
Rivestick Water Supply Scheme (Ind. Sewerage)	W/S	525,000	Cork Water Supply Scheme (Storage - Mount Emla, Ballinoolig & Chetwind) (G)	W	8,500,000
Rohestown Water Supply Scheme	W	2,700,000	Intracama Water Treatment Plant (Sludge Treatment)(G/W)		5,356,000
Saleen Sewerage Scheme	S	1,051,000	Macroom Sewerage Scheme	S	5,150,000
Youghal Water Supply Scheme	W	2,300,000	Minane Bridge Water Supply Scheme	W	1,421,000
<b>Cork West</b>			<b>Cork West</b>		
Castletownshend Sewerage Scheme	S	1,576,000	Bantry Regional Water Supply Scheme (Distribution)	W	9,455,000
		50,787,000	Cape Clear Water Supply Scheme	W	1,679,000
<b>Rural Towns &amp; Villages Initiative</b>			Castletownbere Regional Water Supply Scheme		
			Glenamiff Sewerage Scheme	S	2,500,000
<b>Cork North</b>			Roscarberry/Owenahincha Sewerage Scheme		
Buttevant Sewerage Scheme (Collection System)	S	2,446,000	Skibbereen Regional Water Supply Scheme Stage 4	W	7,880,000
Doneraile Sewerage Scheme (Collection System)	S	1,738,000			95,646,000
<b>Cork South</b>			<b>Water Conservation Allocation</b>		
Imishammon (Ballinacoe/Ballinspittle/Garretstown) Water Supply Scheme	W	6,726,000			12,206,000
<b>Cork West</b>			<b>Asset Management Study</b>		
					300,000
Ballydy Sewerage Scheme	S	2,153,000	South Western River Basin District (WFD) Project <sup>1</sup>		
Baltimore Sewerage Scheme	S	3,162,000			9,400,000
Castletownbere Sewerage Scheme	S	5,202,000	<b>Programme Total</b>		
Schull Sewerage Scheme	S	3,523,000			<b>485,489,000</b>
		<b>24,550,000</b>			
<b>Schemes to Advance through Planning</b>					
<b>Cork North</b>					
Milchdstown North Galtees Water Supply Scheme	W	3,620,000			
Milchdstown Sewerage Scheme	S	3,460,000			
Newmarket Sewerage Scheme	S	3,152,000			

<sup>1</sup> 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

Agglomeration details

Leading Local Authority	Cork County Council
Co-Applicants	
Agglomeration	Ringaskiddy Village
Population Equivalent	797
Level of Treatment	none
Treatment plant address	Not Applicable
Grid Ref (12 digits, 6E, 6N)	178274 / 064240
EPA Reference No:	

Contact details

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

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

Discharge Point Code: SW-1

Local Authority Ref No:	MS/RING/0609	
Source of Emission:	Primary Discharge	
Location:	Ringaskiddy Village	
Grid Ref (12 digits, 6E, 6N)	178202 / 064723	
Name of Receiving waters:	Cork Lower Harbour	
Water Body:	Coastal Water Body	
River Basin District	South Western RBD	
Designation of Receiving Waters:	None	
Flow Rate in Receiving Waters:	0	m <sup>3</sup> .sec <sup>-1</sup> Dry Weather Flow
	0	m <sup>3</sup> .sec <sup>-1</sup> 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	Receiving waters are tidal Volume of emissions was not available	

Emission Details:

(i) Volume emitted			
Normal/day	0 m <sup>3</sup>	Maximum/day	0 m <sup>3</sup>
Maximum rate/hour	0 m <sup>3</sup>	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.03 m <sup>3</sup> /sec		

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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	= 0	
Electrical Conductivity (@ 25°C)	µS/cm	Grab	= 0	
Suspended Solids	mg/l	Grab	= 350	65
Ammonia (as N)	mg/l	Grab	= 0	0
Biochemical Oxygen Demand	mg/l	Grab	= 350	65
Chemical Oxygen Demand	mg/l	Grab	= 700	129
Total Nitrogen (as N)	mg/l	Grab	= 50	9.2
Nitrite (as N)	mg/l	Grab	< 0	0
Nitrate (as N)	mg/l	Grab	< 0	0
Total Phosphorous (as P)	mg/l	Grab	= 12	2.3
OrthoPhosphate (as P)	mg/l	Grab	= 10	1.84
Sulphate (SO <sub>4</sub> )	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.

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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	= 650	0.128
Cadmium	µg/l	Grab	< 0	0
Mercury	µg/l	Grab	< 0	0
Selenium	µg/l	Grab	= 150	0.028
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.

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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 <sup>3</sup> /annum)
SW-1	365	0

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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 <sup>3</sup> /annum)	Complies with Definition of Storm Water Overflow
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TABLE F.1(i)(a): SURFACE/GROUND WATER MONITORING

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1a
Grid Ref (12 digits, 6E, 6N)	179255 / 064891

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	01/01/09	14/05/09					
pH		= 8			Grab	2	electrochemical
Temperature	= 0				Grab	0.5	Electrochemical
Electrical Conductivity (@ 25°C)		= 45800			Grab	0.5	electrochemical
Suspended Solids		= 31			Grab	2.5	gravimetric
Ammonia (as N)		= 0.6			Grab	0.02	colorimetric
Biochemical Oxygen Demand		= 2			Grab	0.06	ISE
Chemical Oxygen Demand		< 21			Grab	8	digestion+colorimetric
Dissolved Oxygen		= 0			Grab	0	ISE
Hardness (as CaCO <sub>3</sub> )	= 0				Grab	0	Titimetric
Total Nitrogen (as N)	= 0.4				Grab	0.5	digestion+colorimetric
Nitrite (as N)		< 0.1			Grab	0.013	Colorimetric
Nitrate (as N)		< 0.5			Grab	0.04	Colorimetric
Total Phosphorous (as P)		= 0.082			Grab	0.2	digestion+colorimetric
OrthoPhosphate (as P)		< 0.05			Grab	0.02	Colorimetric
Sulphate (SO <sub>4</sub> )		= 0			Grab	30	Turbimetric
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 0 SALINE Interferences in a number of tests ,no result available for Sulphate .interferences in Ammonia,TP,Suspended Solids due to high level of chloride in samples,default of 01/01/09 and 0 where results are not available
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TABLE F.1(i)(b): SURFACE/GROUND WATER MONITORING (Dangerous Substances)

Primary Discharge Point

Discharge Point Code:	SW-1
MONITORING POINT CODE:	aSW-1a
Grid Ref (12 digits, 6E, 6N)	179255 / 064891

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	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	0.28	GC MS1
Tributyltin	= 0				Grab	0.02	GC MS1
Xylenes	< 1				Grab	1	GC MS1
Arsenic	< 2.8				Grab	0.96	ICP-MS
Chromium	< 20				Grab	20	ICP-OES
Copper	= 58.54				Grab	20	ICP-OES
Cyanide	= 5				Grab	5	COLORIMETRIC
Flouride	< 641				Grab	100	ISE
Lead	< 20				Grab	20	ICP-OES
Nickel	< 20				Grab	20	ICP-OES
Zinc	= 56.74				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	= 2.4				Grab	0.74	ICP-MS
Barium	= 20				Grab	20	ICP-OES

Additional Comments:	TBT results to follow- awaiting on results
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**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 appropriate sub-article.

<b>Regulation 16(1)</b> <b>In the case of an application for a waste water discharge licence, the application shall -</b>		<b>Attachment Number</b>	<b>Checked by Applicant</b>
(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,	Section 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,	Section B3	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	Section B9(i)	Yes
(e)	specify the content and extent of the waste water discharge, the level of treatment provided, if any, and the flow and type of discharge,	Sections A, C, D & E	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.	Section A, Map 05, Map 06, Map 07, Attachment F1,	Yes
(g)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and, if Regulation 17 does not apply, provide details of the likely environmental consequences of any such discharges,	Section E, Attachment F1, EIS	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,	Not applicable	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,	Section A, E, G & Attachment F1	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,	Attachment F1 & EIS	Yes
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,	Attachment E2 and EIS	Yes
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.	Section A & G. Attachment F1	Yes
(n)	Any other information as may be stipulated by the Agency.	Not applicable	Yes
<b>Regulation 16(3)</b> <b>Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -</b>		<b>Attachment Number</b>	<b>Checked by Applicant</b>
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,	Attachment 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 -	-----	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	Not Applicable	Yes
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,	Section E	Yes
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	B9	Yes

<b>Regulation 16(4)</b> 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.		<b>Attachment Number</b>	<b>Checked by Applicant</b>
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 agency.		Yes
<b>Regulation 16(5)</b> 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.		<b>Attachment Number</b>	<b>Checked by Applicant</b>
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.		
<b>Regulation 17</b> 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		<b>Attachment Number</b>	<b>Checked by Applicant</b>
1	EIA provided if applicable	not applicable	No
2	2 hardcopies of EIS provided if applicable.		Yes
3	2 CD versions of EIS, as PDF files, provided.		Yes

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