

This is a draft document and is subject to revision.



# Waste Water Discharge Licence Application Form

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

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**Tracking Amendments to Draft Application Form**

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

|     |            |   |  |
|-----|------------|---|--|
|     |            | plants, where available.<br>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.<br><br>Amend Section G.1 to include Shellfish Waters Directive.  | To accurately reflect the Water Services Act, 2007 requirements.   |
| V.6 | 26/08/2007 | Amendments to Section D to reflect new web based reporting.<br><br>Amended requirements for reporting on discharges under E.1 Waste Water Discharge Frequency and Quantities.<br><br>Amendment to Section F.1 to specify the type of monitoring and reporting required for the background environment.<br><br>Removal of Annexes to application form. | To clarify the reporting requirements.<br><br>To streamline reporting requirements.<br><br>To clarify the reporting requirements for ambient monitoring.<br><br>To reflect the new web based reporting requirements. |

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

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

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

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

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

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

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

**The provision of information in an application for a waste water discharge licence which is false or misleading is an offence under**

**Regulation 35 of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. No. 684 of 2007).**

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

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

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

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## SECTION A: NON-TECHNICAL SUMMARY

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

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

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

A description of:

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

Supporting information should form **Attachment N° A.1**

### Non Technical Summary

Monaghan County Council is applying to the Environmental Protection Agency for a Waste Water Discharge Licence for the existing Waste Water Works at Ballinode. The Waste Water Works comprises a network of gravity sewers, associated rising mains and the wastewater treatment plant at Ballinode. There is one emergency overflow located at the treatment plant site which discharges to the Blackwater River downstream of the effluent discharge point (NGR 263079E, 335894N). The plant is supervised/manned for 2 hours Monday to Friday and for 0.5 hours Saturday and Sunday, giving a total of 11 hours a week.

The Waste Water Treatment Works design capacity is 1000 PE. The Works currently collects and treats domestic and trade effluent from a population equivalent of approximately 462. The Waste Water Treatment Plant treats in the region of 92 cubic metres of effluent every day and provides secondary treatment with nutrient removal (phosphorus reduction) for the effluent. The treated effluent has an average BOD concentration of 9mg/l and average suspended solids concentration of 32.5 mg/l. Average concentrations of nutrients are as follows; orthophosphate 11.6 mg/l (P), Total Phosphorus 4.2 mg/l (P) and Total Nitrogen 11 mg/l (N).

The primary discharge of the Waste Water Works is to the Blackwater Monaghan River (at National Grid Reference 263057E, 335886N) in the townland of Quiglough, Ballinode, Co Monaghan. The associated Waste Water Treatment Plant is located at 263024E 335856N also in the townland of Quiglough, Ballinode Co. Monaghan.

The Blackwater (Monaghan) River has been identified by the Eastern Regional Fisheries Board as an important trout fishery. However, the river is not designated as salmonid water under EC (Quality of Salmonid Water) Regulations, 1988 and as such the river water quality is not

required to meet the quality standards laid down in these regulations. The objective for the river is to attain "good status" by 2015 under the Water Framework Directive.

The nearest flow monitoring data available on the Blackwater River is at the Cappog Bridge Station (NGR 262970E, 335707N)) (OPW Station 03058). The 95-percentile flow is given as the 0.09m<sup>3</sup>/s, 50-percentile flow of 0.65m<sup>3</sup>/s and the mean flow as 1.34m<sup>3</sup>/s.

A Q value of 3 was recorded upstream of the discharge point (Station No. 0130 1.5km d/s Scotstown Br) in 2004. A previous Q value of 3 was recorded in 2001; A Q value of 4 was recorded at this location in 1998 and 1996. No EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003.

A Q value of 4 was recorded downstream of the discharge point (1<sup>st</sup> Br d/s Ballinode) in 2004, 2001, 1998 and 1996. EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2mg/l, median ortho-phosphate of 0.03mg/l, median total ammonia of 0.06mg/l and median oxidised nitrogen of 0.7mg/l.

The overall River Water Framework Directive status for the Blackwater River is 1a, hence it is at risk of failing to meet good status in 2015.

Monaghan County Councils upstream monitoring results (2008-2009) indicate relatively good water quality in the river, with the median orthophosphate level recorded at 0.055 mg/l P, median MRP of 0.04 mg P/l, average ammonia levels of 0.08 mg/l NH<sub>3</sub>-N, average BOD of <2 mg/l, median TP of 0.11mg/l, median TN of 0.13mg/l N and average suspended solids of 5mg/l. Dangerous substances concentrations were below detection level for 9 of the 19 parameters tested in April 2009. However, no levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

Results from the downstream monitoring site (aSW1(P)d) indicates generally good water quality with median orthophosphate levels of 0.02 mg/l P recorded for 2008 and 2009, average ammonia 0.03 mg/l NH<sub>3</sub>-N, average BOD of <2 mg/l, median TP of 0.11 mg/l, average TN of 0.13mg/l N and average suspended solids of 3 mg/l. Dangerous substances concentrations were below detection level for 5 of the 19 parameters tested in April 2009. However, no levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

The assimilative capacity calculations indicate that there is significant dilution capacity within the receiving water, even at low flows, to assimilate discharges from the Waste Water Works in terms of suspended solids and BOD and that the EQS are met downstream of the discharge point for the mean, 50-percentile and 95-percentile flow conditions. Predicted MRP concentrations were slightly elevated from the target level of 0.03mg/l (Phosphorus regulations, 1998).

Overall the results of the assimilative capacity are consistent with the physiochemical water quality monitoring results (EPA and Monaghan Co Co Data) and indicate that the discharges from the works are not having a significant detrimental impact on the receiving environment.

## SECTION B: GENERAL

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

### B.1 Agglomeration Details

**Name of Agglomeration:** Ballinode

#### 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>   | Monaghan County Council |
| <b>Address:</b> | Water Services          |
|                 | County Offices          |
|                 | The Glen                |
|                 | Monaghan                |
| <b>Tel:</b>     | 047 30500               |
| <b>Fax:</b>     | 047 82739               |
| <b>e-mail:</b>  | info@monaghancoco.ie    |

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

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

|                 |                           |
|-----------------|---------------------------|
| <b>Name*:</b>   | Mr Mark Johnston          |
| <b>Address:</b> | Water Services            |
|                 | County Offices            |
|                 | The Glen                  |
|                 | Monaghan                  |
| <b>Tel:</b>     | 047 30500                 |
| <b>Fax:</b>     | 047 82739                 |
| <b>e-mail:</b>  | mjohnston@monaghancoco.ie |

\*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>             | Eugene Farmer (Technician)                        |
| <b>Address:</b>           | Ballinode WWTW, Quiglough, Ballinode, Co Monaghan |
|                           | Co. Monaghan                                      |
| <b>Grid ref (6E, 6N)</b>  | 263024E 335856N                                   |
| <b>Level of Treatment</b> | Secondary   |
| <b>Primary Telephone:</b> | 047 30500   |
| <b>Fax:</b>               | 047 82739   |
| <b>e-mail:</b>            | Eugene.Farmer@monaghantc.ie                       |

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

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     | ✓   |    |

### B.3 Location of Primary Discharge Point

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

|                          |                                   |
|--------------------------|-----------------------------------|
| <b>Type of Discharge</b> | Open Pipe Discharge               |
| <b>Unique Point Code</b> | SW1(P)                            |
| <b>Location</b>          | Quiglough, Ballinode Co. Monaghan |
| <b>Grid ref (6E, 6N)</b> | 263057E 335886N                   |

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     | ✓   |    |

### B.4 Location of Secondary Discharge Point(s)

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

|                          |                |
|--------------------------|----------------|
| <b>Type of Discharge</b> | Not Applicable |
| <b>Unique Point Code</b> | Not Applicable |
| <b>Location</b>          | Not Applicable |
| <b>Grid ref (6E, 6N)</b> | Not Applicable |

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     |     | ✓  |

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

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

|                          |                |
|--------------------------|----------------|
| <b>Type of Discharge</b> | Not Applicable |
| <b>Unique Point Code</b> | Not Applicable |
| <b>Location</b>          | Not Applicable |
| <b>Grid ref (6E, 6N)</b> | Not Applicable |

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     |     | ✓  |

## B.6 Planning Authority

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

|                 |   |
|-----------------|---|
| <b>Name:</b>    | Monaghan County Council                                 |
| <b>Address:</b> | County Offices,<br>The Glen<br>Monaghan<br>Co. Monaghan |
| <b>Tel:</b>     | 047 30500   |
| <b>Fax:</b>     | 047 82739   |
| <b>e-mail:</b>  | planning@monaghancoco.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>    |  |

A Part 8 planning Application was submitted on 02/09/2005 and planning permission was granted on 25/10/05 (Planning Ref: 05/8013)

|   |         |
|---|---------|
| <b>Local Authority Planning File Reference N<sup>o</sup>:</b> | 05/8013 |
|---|---------|

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     | ✓   |    |

**B.7 Other Authorities**

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

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

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

| Within the SFADCo Area | Yes | No |
|------------------------|-----|----|
|                        |     | ✓  |

B.7 (ii) Health Services Executive Region

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

|                 |                                 |
|-----------------|---------------------------------|
| <b>Name:</b>    | Health Service Executive        |
| <b>Address:</b> | Regional Health Office          |
|                 | HSE Dublin & North East         |
|                 | Dublin Road                     |
|                 | Kells,                          |
|                 | Co. Meath                       |
| <b>Tel:</b>     | 046 9280621                     |
| <b>Fax:</b>     | 046 9241784                     |
| <b>e-mail:</b>  | rhodublinnortheast@mailq.hse.ie |

B.7 (iii) Other Relevant Water Services Authorities  
 Regulation 13 of the Waste Water Discharge (Authorisation) Regulations, 2007 requires all applicants, not being the water services authority in whose functional area the relevant waste water discharge or discharges, to which the relevant application relates, takes place or is to take place, to notify the relevant water services authority of the said application.

|                 |                |
|-----------------|----------------|
| <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 and by way of a site notice. See *Guidance Note*.

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

|                            |            |           |
|----------------------------|------------|-----------|
| <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> | 464 – Current PE<br>1000 – Design PE |
| <b>Data Compiled (Year)</b>  | 2009                                 |
| <b>Method</b>                | based on 0.06 kg BOD per head for PE |

Ballinode is a village located approximately 5.6 km from Monaghan town. The village has grown up along a main tributary of the Blackwater River that runs through the village. Ballinode is conveniently located to Monaghan town and close to the village settlements of Scotstown to the north west and Tydavnet to the north.

The population equivalent of village was last estimated at approximately 464 persons (based on 0.06 kg BOD per head for PE).



| Date           | Inlet Flow<br>(Average Flow) | BOD (From Inlet) | BOD Load<br>(From Inlet) | PE Equivalent<br>(From Inlet)<br>(based on 0.06 kg BOD per head for PE) |
|----------------|------------------------------|------------------|--------------------------|---|
|                | m <sup>3</sup> /day          | mg/l             | kg/day                   | mg/person/day   |
| 27.03.2008     | 106.00                       | 305              | 32.3                     | 538.8   |
| 28.05.2008     | 99.00                        | 510              | 50.5                     | 841.5   |
| 27.08.2008     | 92.60                        | 210              | 19.4                     | 324.1   |
| 26.11.2008     | 68.50                        | 215              | 14.7                     | 245.5   |
| 09.04.2009     | 92.00                        | 240              | 22.1                     | 368.0   |
| <b>Average</b> |                              |                  |                          | <b>464</b>  |

### 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.

As stated in the Ballinode Village Plan 2007-2013 and in Chapter 3 Settlement Strategy of the Monaghan County Development Plan 2007-2013, there is 107 hectare of land within the development envelope of which approximately 44 ha are available for development. From **Table 1** below 31 hectares of land is available for residential development (70% of lands available).

| Village   | Lands within Dev. Envelope ha | Lands Available for Dev. ha | Lands Residential Dev. (70% of lands available) ha | Hsg. Capacity @ 15 houses per hectare |
|-----------|-------------------------------|-----------------------------|--|---------------------------------------|
| Ballinode | 107                           | 44                          | 31   | 456                                   |

At low density (15 houses per hectare) it is anticipated that approximately 456 housing units could be built during the Development Plan period if all land within the development limit was used for residential development. This could be a maximum population increase of 1443 based on an average household occupancy of 3.1. This would give a PE of 1907 (worst case scenario) which would leave the treatment plant well over capacity and in need of expansion.

Monaghan County Councils ePlan was consulted with regard to planning permission granted/conditional planning permission from 2008-present. No applications currently within the agglomeration have the potential to be contributing to the Council network.

However, based on the above table approximately 44 ha are available for development within the timeframe of the licence.

Based on census 2006 data, an approximate estimate for the plant loading in 2015 (life span of licence) is approximately 611PE. As the plant is currently designed to cater for a PE of 1000, it will be able to accommodate the extra hydraulic and organic load without posing an environmental risk to the receiving water habitat. However, should all lands be developed, the plant would be operating well over capacity. However, granting of developments would have to reflect the capacity of the WWTW.

It should be noted that in the current economic climate it is probable that not all the housing permissions applied for within the timeframe of the licence for will be realised.

**B.9 (iii) FEES**

State the relevant Class of waste water discharge as per Column 1 of the Second Schedule, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of the Waste Water Discharges (Authorisation) Regulations 2007, S.I. No. 684 of 2007.

| Class of waste water discharge  | Fee (in €) |
|---|------------|
| Discharges from agglomerations with a population equivalent of more than 10,000 | €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 of the extent and type of work to be undertaken and the likely timeframes for this work to be completed.

No Capital Investment Programme has been prioritised for the development.

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     |     | ✓  |

**B.11 Significant Correspondence**

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

There have been no Section 63 notices issued by the Agency in relation to the Ballinode Waste Water Works under the Environmental Protection Agency Acts, 1992 and 2003, as amended by Section 13 of Protection of the Environment Act, 2003.

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     |     | ✓  |

**B.12 Foreshore Act Licences.**

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

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     |     | ✓  |

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## SECTION C: INFRASTRUCTURE & OPERATION

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

### C.1 Operational Information Requirements

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

#### C.1.1 Storm Water Overflows

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

There is one emergency overflow located at the WWTP at 263079E, 335894N. This overflow discharges to the Blackwater River downstream of the discharge point (see **Drawing 6**).

- 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

There are no pumping stations on the networks

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

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

#### **C.1 (i) Ballinode Waste Water Works**

The Waste Water Works serving the town of Ballinode and the immediate environs comprises a network of gravity sewers, and associated rising main and a Waste Water Treatment Works with a design capacity of 1000 P.E.

The primary discharge of the Waste Water Works is to the Blackwater Monaghan River (at National Grid Reference 263057E, 335886N) in the townland of Quiglough, Ballinode, Co

Monaghan. The associated Waste Water Treatment Plant is located at 263024E 335856N also in the townland of Quiglough, Ballinode Co. Monaghan.

The plant is supervised/manned for 2 hours Monday to Friday and for 0.5 hours Saturday and Sunday, giving a total of 11 hours a week.

## 1.1 Waste Water Treatment Plant

### 1.1.1 General

The Waste Water Treatment Plant (WWTP) which provides treatment for a design load of 1000 population equivalent comprises biological treatment in rotating biological contactors and percolating filters followed by settlement and clarification. Sludge from the Ballinode Waste Water Treatment plant is tankered to Monaghan Town WWTP for treatment. The site plan and general arrangement of the Waste Water Treatment Plant is shown on **Drawing 2 of Attachment B2** and **Drawing 6 of Attachment C1** respectively and a schematic flow diagram of the plant is shown on **Drawing 7 in Attachment C1**.

### 1.1.2 Waste Water Treatment Plant Design Criteria

| Parameter                       | Value |
|---------------------------------|-------|
| Population Equivalent           | 1000  |
| DWF (m <sup>3</sup> /day)       | 180   |
| 6 DWF (m <sup>3</sup> /day)     | 1080  |
| Daily BOD <sub>5</sub> (kg/day) | 60    |
| Daily SS (kg/day)               | 75    |

## 1.2 Treatment

### Inlet Screen

The sewage enters the treatment works via the inlet sewer manhole. From here it passes through the Haigh ACE 290 inlet screen. This unit is capable of a maximum through flow of 15l/s. Flows in excess of 3 DWF are diverted to the storm holding tank via a preset overflow weir. As the sewage passes through it is screened and solids and particles greater than 6mm in diameter are removed, separated compacted to a minimum of 40% dry solids content. This is placed in a wheelie bin for further disposal.



### **Inlet Flow Measurement**

The screened sewage enters an open channel rectangular flume.

### **Inlet Sampler**

The open channel is also used as a sample point. A sample is drawn via a plastic suction hose to a conetric sampler.

### **Ferric Dosing Plant**

Ferric Sulphate is dosed into the open channel to facilitate the treatment process. This is controlled with a pulse signal from the flow measurement device. A pulse is sent on every  $m^3$  of effluent which passes through the flume. A measured batched amount is dosed by the duty pump on each pump. The system has a bunded bulk storage tank with an integrated pump/panel compartment. The capacity of the bulk tank is  $6m^3$ .

### **Flow Splitting Chamber**

The flow continues to the Primary Settlement Tank (PST) Splitting Chamber where it is mixed with the return activated sludge and split equally before entering the four primary settlement tanks.



### **Primary Settlement Tanks**

The flow enters the PST's via a Tee down pipe located in each of the tanks. The tanks have been sized on the basis of a 48hr retention time, hence settling most of the gross solids from the effluent.

Manual desludging pipe work has been provided to enable periodic desludging of each of the four tanks. As the flow is displaced it exits the PST's via a stainless steel scum baffle and over a concrete weir wall. The outlets of the PST's are separated in sets of two tanks i.e. one outlet per tanks giving two outlets in total.

### **Rotating Biological Contractor (RBC)**

The flow from each of the PST outlet enters an RBC. There is one RBC in the WWTW. This is an attached growth treatment unit. The biomass grows on plastic discs which are attached to a continuously rotating shaft. The media is partially submerged and is oxygenated as it rotates, encouraging a biomass film of growth on the media.

The RBS has a two stage media disc treatment. The effluent is forwarded to the second stage via a managed flow system. This consists of shaped buckets attached to the rotating shaft, filling and discharging to a collection hopper as the shaft rotates. The RBC is driven by a 1.5kw 3 phase electric motor through a reduction gearbox. The unit runs on a continuous basis.



### **RBC Sump Pump**

A small drainage pump has been provided at the motor/gearbox end of the RBC to facilitate the removal of surface and seepage water.

This is a simple 230VAC plug in pump fitted with an integral float control switch.

### **Settled Effluent Pumps**

The outlets of the RBC's flows to the settled effluent pumping station. Here the effluent is collected and pumped to the biological filter bed splitter box (normal operation) or directly to the FST splitter box (filter bed bypass option). These pumps are controlled with a Siemens Milltronics ultrasonic level measurement device. The pumps are configured Duty/ Assist and each pump (in single operation) will deliver 3DWF or slightly more. The

ultrasonic is programmed with a common stop, duty start and assist start level. These levels are detailed in the Forward Feed Pump Station parameter setting sheets. Should the unit develop a fault; a fault alarm light will be illuminated in the control building. The system will then default to float control. Two floats are present at this plant. The lower float controls the on off of the pump whilst in float control. This is done by initiating a run timer when the float is activated. After the time has elapsed its time settling the pump will stop until the float is re-activated to initiate the cycle again.

### **Filter Bed Splitter Box**

This is the existing splitter box which accepts the pumped flow from the Forward Feed Pumping Station and divides it for distribution to the filter beds.

### **Filter Beds**

There are two plastic media filled filter beds. The effluent is distributed over the media by the use of Adams Hydraulics Distributor arms. The effluent trickles through the filter before discharging to the existing humus tanks.

### **Final Settlement Tank**

The three settlement tanks are made up of an existing Human tank and two new GPR settlement tanks. All the tanks are hopper bottomed with baffle outlet weirs. As the remaining fines settle out the final effluent is displaced over the outlet weir and eventually to the final effluent chamber.

### **Final Effluent Chamber**

The final effluent from the Humus tank flows to the final effluent chamber.

A sampler takes a sample of the final effluent on receipt of 10 pulses (1 pulse per m<sup>3</sup>) from a flow measurement device. Hence, for every 10m<sup>3</sup> a 200ml sample is taken.

### **Return Activated Sludge Pumping Station**

The outlet of the sludge line from the humus tank flows to the sludge return pumping station. Here the sludge is collected and pumped to the PST flow splitting chamber. It joins the incoming effluent entering the primary settlement tanks. These pumps are configured Duty Standby level. The ultrasonic level control is programmed with a common stop level, duty start and standby start.

### **Storm Return Pumping Station**

Effluent enters the storm holding tanks from the inlet screen during storm conditions or when flows in exceed of 3DWF. Excess flow enters the storm taken via a preset overflow weir, located at the inlet screen. As the storm effluent enters the storm tank it is stored whilst the storm conditions or excess flow is still detected at the inflow flow measurement flume.

When the storm conditions subside and the flow measured at the inlet flume is at 1 DWF or less for a set period of time (currently 5 minutes) the storm return is enabled (15 minutes).

During this time the storm return sequence is initiated and the pumps are able to pump back to the inlet manhole at the head of the works. After the set period of storm return enable, the pumps will stop and if the inlet flow is still 1DWF or less for a further period of



time the storm return is again enabled. The idea of this sequence is to avoid the pump hunting on and off with minor flow variations.

When the storm return is enabled the mixing and pumping station is controlled with a Siemens Milltronics ultrasonic level measurement device. Depending on the level within the storm tank, the mixer is started prior to pumping. The mixer will run for a set period of time before allowing the pumps to run (currently set a 3 minutes). The pumps then start to pump and return storm effluent back to the inlet manhole. The speed of the storm pumps is controlled by a variable speed drive which has a fixed set point allowing the pumps to deliver a flow rate of approximately 1.5DWF. The mixer continues to run with the pumps until the storm tank has reached the stop level (currently 0.35m). This is provided the storm enable time has not elapsed. The pump start is set at 0.45m above floor level to ensure that the storm tank is always emptied, even after a brief inflow, this maximises the storm holding tank capacity. The pumps are configured Duty Standby.

### **C.1(iii) Information on the Location Final Discharge Locations**

The primary discharge point SW1(P) discharges to the Blackwater River via a 225mm pipe. The location of the discharge is shown on **Drawing 3** of **Attachment B3**.



There is one emergency overflow located at the WWTP at 263079E, 335894N. This overflow discharges to the Blackwater River downstream of the discharge point (see **Drawing 6**).

**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> |
|                            | ✓          |           |

**C.2 Outfall Design and Construction**

Provide details on the primary discharge point & secondary discharge points and storm overflows to include reference, location, design criteria and construction detail.

**Primary Discharge Point - SW1(P)**

The primary discharge of the waste water works is to the Blackwater River at 263057E, 335886N in the townland of Quiglough, Ballinode, Co. Monaghan (see **Drawing 3** of **Attachment B.3**).

The final effluent from the Treatment Works is conveyed from the treatment works to the River Blackwater through a 2250mm diameter concrete pipe.

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

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



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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.

Monitoring data for the influent for 2008 to 2009 is contained in **Table D.1(iv) Attachment D.1.**

**Tables D.1(i)(a), (b) & (c)** have been completed for the primary discharge are contained in **Attachment D.1**

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     | ✓   |    |

## D.2 Tabular Data on Discharge Points

Applicants should submit the following information for each discharge point:

**Table D.2:**

| PT_CD  | PT_TYPE | LA_NAME             | RWB_TYPE | RWB_NAME            | DESIGNATION    | EASTING | NORTHING |
|--------|---------|---------------------|----------|---------------------|----------------|---------|----------|
| SW1(P) | Primary | Monaghan<br>Co. Co. | River    | Blackwater<br>River | Not Designated | 263057  | 335886   |

Note: The Blackwater (Monaghan) River is only designated as nutrient sensitive from the confluence of the River Shambles to Newmills Bridge.

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.

An estimation of the quantity of waste water likely to be emitted in relation to the primary discharge is contained in **Table E.1(i) of Attachment E1.**

Composite sampling is in place on the primary discharge.

### **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.

### **Environmental Monitoring & Sampling**

The Monaghan County Council laboratory carries out the sampling of the discharges from the Ballinode Waste Water Treatment Plant and the monitoring of the water in the Blackwater River (Monaghan) upstream and downstream of the primary discharge. Sampling of the primary discharge from the Ballinode Waste Water Treatment Works and the monitoring of the upstream and downstream monitoring locations are undertaken every 6 weeks. At present composite samples are taken of the influent and effluent and grab samples are taken for upstream and downstream monitoring points.

Monaghan County Council Laboratory is on the register of approved laboratories submitting data to the EPA. This register has been compiled in compliance with Section 66 of the EPA Act 1992.

Section 66 of the Environmental Protection Agency Act 1992 provides for the establishment of an intercalibration programme for the purpose of assessing analytical performance and ensuring the validity and comparability of environmental data for laboratories which submit data to the Agency. It also provides for the establishment of a register of quality approved laboratories.

### **Monitoring, Sampling & Analytical Procedures**

Careful collection is carried out during all sampling to ensure that the relative proportions or concentrations of all pertinent components are the same in the samples as in the materials being sampled. The samples are also handled carefully to ensure that no significant change in the composition occurs before the tests are made.

During the waste water and water sampling all personnel wear safety boots and latex gloves at all times. Due care and attention is taken at all times.

All of the sampling points are located in places that have safe means of access.

The variability of the discharges and their effects on the receiving environment has been considered in determining the sampling programme. Equipment calibration and equipment maintenance are carried out in order to ensure accurate and reliable monitoring.

Further details on the annual sampling programme schedule for Ballinode are detailed below.

| Plant Name | Design  | Min No of Samples | Raw Influent | Final Effluent | River Up Stream | River Down stream | Total |
|------------|---------|-------------------|--------------|----------------|-----------------|-------------------|-------|
| Ballinode  | PE 1000 | 6                 | 6            | 6              | 6               | 6                 | 24    |

Euro Environmental Services, Drogheda, Co. Louth have sampled and analysed for the dangerous substances and characterisation of emission parameters in 2009. Details of their accreditation of analysis are included in **Attachment E.2**.

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

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

### 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 |
|----------|---------|----------|---------|----------|----------|
| SW1(P)s  | Primary | S        | 263036  | 335867   | N        |
| aSW1(P)u | Primary | M        | 262979  | 335758   | N        |
| aSW1(P)d | Primary | M        | 263809  | 335772   | N        |

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

#### Sampling Data

Sampling Data pertaining to the discharge are tabled in **Attachment E.4**.

#### Monitoring Requirements & Treatment Standards

Ballinode Waste Water Works complies with the monitoring and treatment standards specified in the Urban Waste Water Treatment Regulations S.I 254 of 2001.

**Attachment E.4** should contain any supporting information.

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     | ✓   |    |

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

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

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

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

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

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

#### General

The outfall from the Ballinode Waste Water Plant discharges to the Blackwater Monaghan River at National Grid Reference 263057E 335886N in the Townland of Quiglough, Ballinode Co Monaghan.

The Blackwater (Monaghan) River has been identified by the Eastern Regional Fisheries Board as an important trout fishery. However, the river is not designated as salmonid water under EC (Quality of Salmonid Water) Regulations, 1988 and as such the river water quality is not required to meet the quality standards laid down in these regulations. The objective for the river is to attain "good status" by 2015 under the Water Framework Directive.

The treated effluent has an average BOD concentration of 9mg/l and average suspended solids concentration of 32.5 mg/l. Average concentrations of nutrients are as follows; orthophosphate 11.6 mg/l (P), Total Phosphorus 4.2 mg/l (P) and Total Nitrogen 11 mg/l (N).

The nearest flow monitoring data available on the Blackwater River is at the Cappog Bridge Station (NGR 262970E, 335707N) (OPW Station 03058). The 95-percentile flow is given as the 0.09m<sup>3</sup>/s, 50-percentile flow of 0.65m<sup>3</sup>/s and the mean flow as 1.34m<sup>3</sup>/s.

A Q value of 4 was recorded downstream of the discharge point (1<sup>st</sup> Br d/s Ballinode) in 2004 2001, 1998 and 1996(see **Table 2** below). EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003. This data gave a median BOD value of 2mg/l, median ortho-phosphate of 0.03mg/l, median total ammonia of 0.06mg/l and median oxidised nitrogen of 0.7mg/l.

A Q value of 3 was recorded upstream of the discharge point (Station No. 0130 1.5km d/s Scotstown Br) in 2004 (see **Table 2** below). A previous Q value of 3 was recorded in 2001; A Q value of 4 was recorded at this location in 1998 and 1996. No EPA physiochemical water quality monitoring data is available at this site for 2001 to 2003.



However, Monaghan Co Co. monitoring data would indicate relatively good water quality in the river as outlined below.

**Table 2 Biological Quality Ratings (Q Values) (Source EPA)**

| Location   | Station Number | Station                          | 1996 | 1998 | 2004 |
|------------|----------------|----------------------------------|------|------|------|
| Downstream | 0130           | 1 <sup>st</sup> Br d/s Ballinode | 4    | 4    | 4    |
| Upstream   | 0300           | 1.5km d/s of Scotstown Br        | 3    | 4    | 4    |

(Q3 = moderately Polluted; Q4-5, Q4 = Unpolluted)

Monaghan Co. Co. monitors the river both upstream and downstream of the discharge from the Waste Water Works. These locations are shown on **Drawing 4 of Attachment B3**. Monitoring data collected for the year 2008 and 2009 is presented in **Tables F.1(i)a aSW1(P)u and aSW1(P)d**. Monitoring results for dangerous substances relate to a once-off samples collected in April 2009 and are presented in **Tables F.1(i)b aSW(P)u and aSW(P)d**.

Monaghan County Councils upstream monitoring results (2008-2009) indicate relatively good water quality in the river, with the median orthophosphate level recorded at 0.055 mg/l P, median MRP of 0.04 mg P/l, average ammonia levels of 0.08 mg/l NH<sub>3</sub>-N, average BOD of <2 mg/l, median TP of 0.11mg/l, median TN of 0.13mg/l N and average suspended solids of 5mg/l. Dangerous substances concentrations were below detection level for 9of the 19 parameters tested in April 2009. However, no levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

Results from the downstream monitoring site (aSW1(P)d) indicates generally good water quality with median orthophosphate levels of 0.02 mg/l P recorded for 2008 and 2009, average ammonia 0.03 mg/l NH<sub>3</sub>-N, average BOD of <2 mg/l, median TP of 0.11 mg/l, average TN of 0.13mg/l N and average suspended solids of 3 mg/l. Dangerous substances concentrations were below detection level for 5of the 19 parameters tested in April 2009. However, no levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001.

The impact of the primary discharge point on the Blackwater River is evaluated in the Assimilative Capacity calculations below.

### **Assimilative Capacity of Receiving Water**

The Assimilative Capacity of the receiving waters is a measure of its ability or suitability to absorb waste water discharges whilst complying with relevant legislation and water quality objectives.

The impact of the primary discharge point on the Blackwater River is evaluated in the Assimilative Capacity calculations below.

The nearest flow monitoring data available on the Blackwater River is at the Cappog Bridge Station (NGR 262970E, 335707N)) (OPW Station 03058). The OPW 95-percentile flow (m<sup>3</sup>/s) of 0.09, the mean annual flow of 1.34 (m<sup>3</sup>/s) and 50-percentile flow of 0.65 from the Cappog Bridge Station were used in these calculations.

Using the Blackwater River flow rates outlined above and the Blackwater River background water quality (Monaghan Co Co and EPA Data), an assimilative capacity assessment of the

River has been carried out using the mean annual flow, 95-percentile flow conditions and 50-percentile flow conditions for BOD, SS and Total Phosphorous and MRP.

The assessment has been undertaken on the basis of an average discharge flow to the receiving water from the Wastewater Treatment Plant.

**BOD Assimilative Capacity**

**Mean Flow Conditions**

The BOD assimilative capacity of the river under mean flow conditions can be calculated by:

$$AC = (C_{max} - C_{back}) \times 86.4 \times Q_{mean}$$

where,

AC = waste assimilative capacity

$C_{max}$  = maximum permissible BOD concentration in the watercourse (in this case taken as a maximum of 4mg/l)

$C_{back}$  = Average background BOD level upstream (<2 mg/l)

86.4 = factor to convert WAC to a daily load (kg/day)

$Q_{mean}$  = mean flow in m<sup>3</sup>/s (1.34 m<sup>3</sup>/s)

Therefore,

$$AC = (4 - 2) \times 86.4 \times 1.34$$

**AC = 231.5 kg/day**

**Total Amount Discharge to River:**

With an average effluent discharge volume of 92m<sup>3</sup>/day, the total amount of BOD discharged to the Blackwater River shall be:

$$92,000/\text{day} \times 9 \text{ mg/l} = \mathbf{0.83\text{kg/day}}$$

This constitutes 0.4% of the assimilative capacity (AC) of the Blackwater River as outlined above.

The **resulting BOD concentration in the river** can be estimated from the formula:

The resulting BOD concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (9mg/l)

$C_{back}$  = concentration in river u/s of discharge (<2mg/l)

$Q_{back}$  = flow of river (l/d) (1.34 m<sup>3</sup>/s) = 115,776,000l/d

$Q_d$  = discharge volume (l/d) 92,000l/d

$$1\text{m}^3/\text{s} = 86,400,000 \text{ l/d}$$

Therefore:

$$CR = [(2 \times 115,776,000) + (9 \times 92,000)] / [115,776,000 + 107,000]$$

$$\mathbf{CR = 2.008 \text{ mg/l}}$$

### 95-percentile Flow Conditions

The BOD assimilative capacity of the river under 95-percentile flow conditions can be calculated by:

$$\mathbf{AC = (C_{max} - C_{back}) \times 86.4 \times Q_{95}} \quad \text{[National Urban Waste Water Study 2005]}$$

where,

AC = waste assimilative capacity

$C_{max}$  = maximum permissible BOD concentration in the watercourse (in this case taken as a maximum of 4 mg/l)

$C_{back}$  = Average background BOD level upstream (<2 mg/l)

86.4 = factor to convert WAC to a daily load (kg/day)

$Q_{95}$  = 95-percentile flow in  $m^3/s$  (0.09  $m^3/s$  or 7,776,000/d)

Therefore,

$$AC = (4 - 2) \times 86.4 \times 0.09$$

$$\mathbf{AC = 15.5 \text{ kg/day}}$$

### Total Amount Discharge to River:

With an average effluent discharge volume of 92 $m^3$ /day, the total amount of BOD discharged to the Blackwater River shall be:

$$92,000\text{l/day} \times 9 \text{ mg/l} = \mathbf{0.83\text{kg /day}}$$

This constitutes **5.4%** of the assimilative capacity of the Blackwater River as outlined above.

The **resulting BOD concentration in the river** resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (9mg/l)

$C_{back}$  = concentration in river u/s of discharge (<2mg/l)

$Q_{back}$  = flow of river (l/d) (95% flow of 0.09 $m^3/s$  = 7,776,000l/d)

$Q_d$  = discharge volume (l/d) 92,000l/d

$$1\text{m}^3/\text{s} = 86,400,000 \text{ l/d}$$

Therefore:

$$CR = [(2 \times 7,776,000) + (9 \times 92,000)] / [7,776,000 + 92,000]$$

$$\mathbf{CR = 2.08 \text{ mg/l}}$$

### 50-percentile Flow Conditions

The BOD assimilative capacity of the river under 50-percentile flow conditions can be calculated by:

$$\mathbf{AC = (C_{max} - C_{back}) \times 86.4 \times Q_{50}}$$

where,

AC = waste assimilative capacity

$C_{max}$  = maximum permissible BOD concentration in the watercourse (in this case taken as a maximum of 4 mg/l)

$C_{back}$  = Average background BOD level upstream (<2 mg/l)

86.4 = factor to convert WAC to a daily load (kg/day)

$Q_{50}$  = 50-percentile flow in  $m^3/s$  (0.65  $m^3/s$  or 56,160,000/d)

Therefore,

$$AC = (4 - 2) \times 86.4 \times 0.65$$

$$\mathbf{AC = 112.32 \text{ kg/day}}$$

### Total Amount Discharge to River:

With an average effluent discharge volume of 92 $m^3$ /day, the total amount of BOD discharged to the Blackwater River shall be:

$$92,000\text{l/day} \times 9 \text{ mg/l} = \mathbf{0.83\text{kg/day}}$$

This constitutes **0.7%** of the assimilative capacity of the Blackwater River as outlined above.

The **resulting BOD concentration in the river** resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (9g/l)

$C_{back}$  = concentration in river u/s of discharge (<2mg/l)

$Q_{back}$  = flow of river (l/d) (50% flow of 0.09 $m^3/s$  = 56,160,000/d)

$Q_d$  = discharge volume (l/d) 92,000/d

$$1\text{m}^3/\text{s} = 86,400,000 \text{ l/d}$$

Therefore:

$$CR = [(2 \times 56,160,000) + (9 \times 92,000)] / [56,160,000 + 92,000]$$

$$CR = 2.011\text{mg/l}$$

### Summary Result - BOD

| BOD                                  | Mean Annual Flow | 95-Percentile Flow | 50-Percentile Flow |
|--------------------------------------|------------------|--------------------|--------------------|
| Assimilative Capacity of River       | 231.5kg/day      | 15.5kg/day         | 112.32kg/day       |
| Total Amount Discharged              | 0.83kg/day       | 0.83kg/day         | 0.83kg/d           |
| % of Assimilative Capacity Absorbed  | 0.4%             | 5.4%               | 0.7%               |
| Existing Average Background Upstream | <2mg/l           | <2mg/l             | <2mg/l             |
| Resultants Conc in River             | 2.008mg/l        | 2.08mg/l           | 2.011mg/l          |

The above calculations indicate the discharge, in terms of BOD concentration, is not impacting on the water quality of the river and the resultant concentration downstream is within the EQS of <4mg/l for all flow conditions.

### Phosphorous Assimilative Capacity

Monaghan Co Co and EPA samples taken upstream and downstream of the discharge point in 2009 indicate median orthophosphate concentrations of 0.055 mg/l and 0.03mg/l respectively. The median Total Phosphorus upstream and downstream is 0.12mg/l and 0.11mg/l respectively.

The current Q value downstream of the discharge point (1<sup>st</sup> Br d/s Ballinode) is Q4 with a Minimum Target Biological Quality (Q) Rating/Q Index of 4 or Molybdate-Reactive Phosphate Median Concentration(ugP/L) of 30 (Phosphorus Regulations, 1998).

The MRP (as Total P) concentration of the river as result of the discharge is calculated below using the 50%ile flow rate for the river and also the 95%ile flow rate (Station 03058).

### 50-percentile Flow Conditions

Final River Phosphorus Concentration using 50-percentile Flow Rate:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)  
 C<sub>d</sub> = concentration in discharge (Total P =4.2.)  
 C<sub>back</sub> = concentration in river u/s of discharge (0.12)

$Q_{back}$  = flow of river (l/d) (50% flow of  $0.65\text{m}^3/\text{s} = 56,160,000\text{l/d}$   
 $Q_d$  = discharge volume (l/d)  $92,000\text{l/d}$

$1\text{m}^3/\text{s} = 86,400,000\text{ l/d}$

Therefore:

$$CR = [(0.12 \times 56,160,000) + (4.2 \times 92,000)] / [56,160,000 + 92,000]$$

**Final River Concentration = 0.1266 mg/l (Total P) = 0.04 MPR as Total P = 40ugP/L**

### 95-percentile Flow Conditions

Final River Phosphorus Concentration using 95-percentile Flow Rate

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

**Where;**

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (Total P = 4.2)

$C_{back}$  = concentration in river u/s of discharge (0.12)

$Q_{back}$  = flow of river (l/d) 95% flow of  $0.09\text{m}^3/\text{s} = 7,776,000\text{l/d}$

$Q_d$  = discharge volume (l/d)  $92,000\text{l/d}$

Therefore:

$$CR = [(0.12 \times 7,776,000) + (4.2 \times 92,000)] / [7,776,000 + 92,000]$$

**Final River Concentration = 0.167 mg/l (Total P) = 0.05 MPR as Total P = 50ugP/L**

### Summary Results – Total Phosphorus & Molybdate Reactive Phosphate Concentration

The calculations above show that the Blackwater River has the capacity to assimilate the discharge in terms of Total Phosphorous and MRP. However the predicted results are resultant slightly elevated from the MRP target concentration of  $0.03\text{mg P/l}$ .

| Total Phosphorous & MRP              | 50-percentile Flow | 95-percentile Flow |
|--------------------------------------|--------------------|--------------------|
| Existing Average Background Upstream | 0.12mg/l           | 0.12mg/l           |
| Resultants Conc in River (Total P)   | 0.1266 mg/l        | 0.167 mg/l         |
| Resultants Conc in River (MRP)*      | 0.04mg P/l         | 0.05mg P/l         |

\* The Molybdate Reactive Phosphate (MRP) concentration was derived using Total P =  $3.07 * \text{MRP}$

## Suspended Solids (SS) Assimilative Capacity

### Mean Flow Conditions

The suspended solids assimilative capacity of the river under the mean flow conditions can be calculated by:

$$AC = (C_{\max} - C_{\text{back}}) \times 86.4 \times Q_{\text{mean}}$$

where,

AC = waste assimilative capacity

$C_{\max}$  = maximum permissible SS concentration in the watercourse (in this case taken as a maximum of 25mg/l)

$C_{\text{back}}$  = Average background SS level upstream (7 mg/l)

86.4 = factor to convert WAC to a daily load (kg/day)

$Q_{\text{mean}}$  = Mean Flow in m<sup>3</sup>/s (1.34 m<sup>3</sup>/s)

Therefore,

$$AC = (25 - 7) \times 86.4 \times 1.34$$

$$AC = 2093.9\text{kg/day}$$

### Total Amount Discharge to River:

With an average effluent discharge volume of 92m<sup>3</sup>/day, the total amount of SS discharged to the Blackwater River shall be

$$92,000\text{l/day} \times 32.5\text{mg/l} = 2.99\text{kg/day}$$

This constitutes 0.14% of the assimilative capacity of the Blackwater River as outlined above.

The resulting SS concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{\text{back}} * Q_{\text{back}}) + (C_d * Q_d)}{(Q_{\text{back}} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (32.5mg/l)

$C_{\text{back}}$  = concentration in river u/s of discharge (7mg/l)

$Q_{\text{back}}$  = flow of river (l/d) (1.34 m<sup>3</sup>/s) = 115,776,000l/d

$Q_d$  = discharge volume (l/d) 92,000l/d

$$1\text{m}^3/\text{s} = 86,400,000 \text{ l/d}$$

Therefore:

$$CR = [(7 \times 115,776,000) + (32.5 \times 92,000)] / [115,776,000 + 92,000]$$

$$CR = 7.02 \text{ mg/l}$$

## 95-percentile Flow Conditions

The SS assimilative capacity of the river under 95-percentile flow conditions can be calculated by:

$$AC = (C_{\max} - C_{\text{back}}) \times 86.4 \times Q_{95}$$

where,

AC = waste assimilative capacity

$C_{\max}$  = maximum permissible SS concentration in the watercourse (in this case taken as a maximum of 25 mg/l)

$C_{\text{back}}$  = Average background SS level upstream (7 mg/l)

86.4 = factor to convert WAC to a daily load (kg/day)

$Q_{95}$  = 95-percentile flow in  $\text{m}^3/\text{s}$  ( $0.09\text{m}^3/\text{s} = 7,776,000\text{l/d}$ )

Therefore,

$$AC = (25 - 7) \times 86.4 \times 0.09$$

$$AC = 139.9 \text{ kg/day}$$

### Total Amount Discharge to River:

With an average effluent discharge volume of  $107\text{m}^3/\text{day}$ , the total amount of SS discharged to the Magherarney River shall be:

$$92,000\text{l/day} \times 32.5 \text{ mg/l} = 2.99\text{kg/day}$$

This constitutes 2.1% of the assimilative capacity of the Blackwater River as outlined above.

The **resulting SS Concentration in the River** can be estimated from the formula:

The resulting SS concentration in the river resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{\text{back}} * Q_{\text{back}}) + (C_d * Q_d)}{(Q_{\text{back}} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (32.5mg/l)

$C_{\text{back}}$  = concentration in river u/s of discharge (7mg/l)

$Q_{\text{back}}$  = flow of river (l/d) (95% flow of ( $0.09\text{m}^3/\text{s} = 7,776,000\text{l/d}$ ))

$Q_d$  = discharge volume (l/d) 92,000l/d

$1\text{m}^3/\text{s} = 86,400,000 \text{ l/d}$

Therefore:

$$CR = [(7 \times 7,776,000) + (32.5 \times 107,000)] / [7,776,000 + 92,000]$$

$$CR = 7.29 \text{ mg/l}$$



## 50-percentile Flow Conditions

The SS assimilative capacity of the river under 50-percentile flow conditions can be calculated by:

$$AC = (C_{max} - C_{back}) \times 86.4 \times Q_{50}$$

where,

AC = waste assimilative capacity

$C_{max}$  = maximum permissible SS concentration in the watercourse (in this case taken as a maximum of 25 mg/l)

$C_{back}$  = Average background SS level upstream (7 mg/l)

86.4 = factor to convert WAC to a daily load (kg/day)

$Q_{50}$  = 50-percentile flow in  $m^3/s$  ( $0.65 m^3/s$  or  $56,160,000/d$ )

Therefore,

$$AC = (25-7) \times 86.4 \times 0.65$$

$$AC = 1010.8 \text{ kg/day}$$

### Total Amount Discharge to River:

With an average effluent discharge volume of  $92m^3/day$ , the total amount of SS discharged to the Blackwater River shall be:

$$92,000l/day \times 32.5 \text{ mg/l} = 2.99\text{kg/day}$$

This constitutes 0.064% of the assimilative capacity of the Blackwater River as outlined above.

The **resulting SS concentration in the river** resulting from the effluent input can be estimated using the following Formula:

$$CR = \frac{(C_{back} * Q_{back}) + (C_d * Q_d)}{(Q_{back} + Q_d)}$$

Where;

CR = resulting concentration in river (mg/l)

$C_d$  = average concentration in discharge (32.5mg/l)

$C_{back}$  = concentration in river u/s of discharge (7mg/l)

$Q_{back}$  = flow of river (l/d) (50% flow of  $0.09m^3/s = 56,160,000/d$ )

$Q_d$  = discharge volume (l/d) 92,000l/d

$$1m^3/s = 86,400,000 \text{ l/d}$$

Therefore:

$$CR = [(7 \times 56,160,000) + (32.5 \times 92,000)] / [56,160,000 + 92,000]$$

$$CR = 7.04\text{mg/l}$$

## Summary Result – Suspended Solids

| Suspended Solids                            | Mean Flow    | 95-percentile Flow | 50-percentile Flow |
|---|--------------|--------------------|--------------------|
| <b>Assimilative Capacity of River</b>       | 2093.9kg/day | 139.9kg/day        | 1010.8             |
| <b>Total Amount Discharged</b>              | 2.99kg/day   | 2.99kg/day         | 2.99kg/day         |
| <b>% of Assimilative Capacity Absorbed</b>  | 0.14%        | 2.1%               | 0.29%              |
| <b>Existing Average Background Upstream</b> | 7mg/l        | 7mg/l              | 7mg/l              |
| <b>Resultants Conc in River</b>             | 7.02mg/l     | 7.29mg/l/l         | 7.04mg/l/l         |

The calculations above show that the Blackwater River has the capacity to assimilate the discharge in terms of Suspended Solids and indicate that the suspended solids EQS (25mg/l) is met downstream of the discharge point.

## Summary

The assimilative capacity calculations above indicate that there is significant dilution capacity within the receiving water, even at low flows, to assimilate discharges from the Waste Water Works in terms of suspended solids and BOD and that the EQS are met downstream of the discharge point for the mean, 50-percentile and 95-percentile flow conditions. Predicted MRP concentrations were slightly elevated from the target level of 0.03mg/l (Phosphorus regulations, 1998).

Overall the results of the assimilative capacity are consistent with the physiochemical water quality monitoring results (EPA and Monaghan Co Co Data) and indicate that the discharges from the works are not having a significant detrimental impact on the receiving environment.

- 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.

**Tables F.1 (i) (a) & (b)** are completed for the primary discharge point.

- 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.

There are no secondary discharge points. **Tables F.1 (ii) (a) & (b)** are therefore not completed.

- 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.

#### Not Applicable

- 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.

A copy of the summary leaflet of the Draft River Basin Management Plan for the Neagh Bann International River Basin District summary leaflet is contained in **Attachment G2**.

The Blackwater River at Ballinode is not designated.

- 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.

The level of dangerous substances both in the effluent and in the Blackwater Monaghan River upstream and downstream of the discharge point as detailed in **Tables D1** and **F1** show a level below those in the Water Quality (Dangerous Substances) Regulations 2001 and therefore the emissions are not considered likely to impair the environment.

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

The assimilative capacity of the river would suggest that the discharges from the waste water works will not have significant effects on faecal coliform, salmonella and protozoan pathogen numbers in the environment.

- Indicate whether or not emissions from the agglomeration or any plant, methods, processes, operating procedures or other factors which affect such emissions are likely to have a significant effect on –
  - (a) a site (until the adoption, in respect of the site, of a decision by the European Commission under Article 21 of Council Directive 92/43/EEC for the purposes of the third paragraph of Article 4(2) of that Directive) –
    - (i) notified for the purposes of Regulation 4 of the Natural Habitats Regulations, subject to any amendments made to it by virtue of Regulation 5 of those Regulations,

- (ii) details of which have been transmitted to the Commission in accordance with Regulation 5(4) of the Natural Habitats Regulations, or
- (iii) added by virtue of Regulation 6 of the Natural Habitats Regulations to the list transmitted to the Commission in accordance with Regulation 5(4) of those Regulations,
- (b) a site adopted by the European Commission as a site of Community importance for the purposes of Article 4(2) of Council Directive 92/43/EEC<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)

There are no Natura 2000 sites within the vicinity of the discharge point.

Emissions from the Wastewater Treatment site therefore will not have a significant effect on any Natura 2000 site. Hence, there has been no correspondence with the National Parks and Wildlife Service in connection with the existing or proposed discharge.

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

The impact of the discharge from the Ballinode wastewater treatment works has been calculated in the Assimilative Capacity calculations above. These results show that the impact of the discharge can be assimilated into the river and will not have a pollution effect over long distances.

- o 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**.

There are no modelling details pertaining to the discharges from the agglomeration.

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

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

Applicants should submit the following information for each downstream or downgradient drinking water abstraction point. The zone of contribution for the

abstraction point should be delineated and any potential risks from the waste water discharge to the water quality at that abstraction point identified.

There is no drinking water abstraction downstream of the WWTW. The waste water works will not have significant effects on faecal coliform, salmonella and protozoan pathogen numbers in the environment.

| ABS_CD | AGG_SERVED | ABS_VOL | PT_CD | DIS_DS | EASTING | NORTHING | VERIFIED |
|--------|------------|---------|-------|--------|---------|----------|----------|
|        |            |         |       |        |         |          |          |

**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.

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## SECTION G: PROGRAMMES OF IMPROVEMENTS

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

### G.1 Compliance with Council Directives

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

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

No Programme of Improvements has been prioritised for the development. The treatment works has been designed to comply with the above Directives.

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

| Attachment included | Yes | No |
|---------------------|-----|----|
|                     |     | ✓  |

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

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

#### Water Quality Management Plans or Catchment Management Plans

The summary leaflet of the Draft River Basin Management Plan for the Neagh Bann International River Basin District summary leaflet is contained in **Attachment G2**.

## Phosphorus Removal

The treatment works includes a facility for the removal of phosphorus. The phosphorus is removed by simultaneous precipitation by the addition of ferric sulphate which acts as a coagulant. The ferric sulphate is injected into the incoming sewage at the inlet to the aeration basin.

An automatic sampler is provided at the inlet to the works to monitor the phosphorous load to the plant. The plant operator sets the ferric sulphate dose by adjusting the stroke of the pump.

Monaghan Co Co and EPA samples taken upstream and downstream of the discharge point in 2009 indicate median orthophosphate concentrations of 0.055 mg/l and 0.03mg/l respectively. The median Total Phosphorus upstream and downstream is 0.12mg/l and 0.11mg/l respectively (MRP 0.039mg P/l upstream and MRP 0.35mg P/l downstream).

The current Q value downstream of the discharge point (1<sup>st</sup> Br d/s Ballinode) is Q4 with a Minimum Target Biological Quality (Q) Rating/Q Index of 4 or Molybdate-Reactive Phosphate Median Concentration(ugP/L) of 30 (Phosphorus Regulations, 1998).

The predicted MRP concentration from the assimilative capacity calculations is above the actual level recorded. With the actual levels (calculated from TP) being marginally above the target level (0.03mg/l). However, results from the 2006 Implementation Report indicated MRP downstream at station (0300) a current MRP value of 0.03mg/l.

The Council Phosphate Implementation Report 2006 is contained in **Attachment G2**.

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

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

### **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.

No Programme of Improvements has been prioritised for the development.

**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.

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

#### 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.

Not Applicable.

**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 |
|---------------------|-----|----|
|                     |     | ✓  |

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**SECTION H: DECLARATION**

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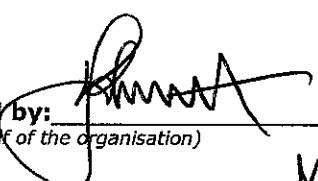
**Declaration**

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

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

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

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

Signed by:   
(on behalf of the organisation)

Date: 15 6 09

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

MARK J. H. STOF

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

S.E.E

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Agglomeration details

|                              |  |
|------------------------------|--|
| Leading Local Authority      | Monaghan County Council                                    |
| Co-Applicants                |  |
| Agglomeration                | Ballinode Waste Water Treatment Works                      |
| Population Equivalent        | 1000   |
| Level of Treatment           | Secondary  |
| Treatment plant address      | Ballinode WWTW,<br>Quiglough,<br>Ballinode,<br>Co Monaghan |
| Grid Ref (12 digits, 6E, 6N) | 263024 / 335856  |
| EPA Reference No:            |  |

Contact details

|                  |  |
|------------------|--|
| Contact Name:    | Mr Mark Johnston   |
| Contact Address: | Water Services<br>County Offices<br>The Glen<br>Monaghan |
| Contact Number:  | 047 30500  |
| Contact Fax:     | 047 82739  |
| Contact Email:   | mjohnston@monaghancoco.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:   |  |
| Source of Emission:   | Ballinode Waste Water Treatment Works  |
| Location:   | Quiglough, Ballinode, Co Monaghan  |
| Grid Ref (12 digits, 6E, 6N)  | 263057 / 335886  |
| Name of Receiving waters:   | Blackwater River   |
| Water Body:   | River Water Body   |
| River Basin District  | Neagh Bann IRBD  |
| Designation of Receiving Waters:  | Not Applicable   |
| Flow Rate in Receiving Waters:  | 0.03 m <sup>3</sup> .sec <sup>-1</sup> Dry Weather Flow<br>0.09 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) |  |

Emission Details:

|                    |                           |                          |                                |
|--------------------|---------------------------|--------------------------|--------------------------------|
| (i) Volume emitted |                           |                          |                                |
| Normal/day         | 92 m <sup>3</sup>         | Maximum/day              | 180 m <sup>3</sup>             |
| Maximum rate/hour  | 7.5 m <sup>3</sup>        | Period of emission (avg) | 60 min/hr 24 hr/day 365 day/yr |
| Dry Weather Flow   | 0.001 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                  | 24 hr flow proportional | = 7.3          |         |
| Temperature                      | °C                  | 24 hr flow proportional | = 10.2         |         |
| Electrical Conductivity (@ 25°C) | µS/cm               | 24 hr flow proportional | = 877          |         |
| Suspended Solids                 | mg/l                | 24 hr flow proportional | = 73           | 13.432  |
| Ammonia (as N)                   | mg/l                | 24 hr flow proportional | = 0.07         | 0.01288 |
| Biochemical Oxygen Demand        | mg/l                | 24 hr flow proportional | = 22           | 4.048   |
| Chemical Oxygen Demand           | mg/l                | 24 hr flow proportional | = 80           | 14.72   |
| Total Nitrogen (as N)            | mg/l                | 24 hr flow proportional | = 18.4         | 3.3856  |
| Nitrite (as N)                   | mg/l                | 24 hr flow proportional | = 0.137        | 0.0252  |
| Nitrate (as N)                   | mg/l                | 24 hr flow proportional | = 12.88        | 2.3699  |
| Total Phosphorous (as P)         | mg/l                | 24 hr flow proportional | = 7.5          | 1.38    |
| OrthoPhosphate (as P)            | mg/l                | 24 hr flow proportional | = 23           | 4.232   |
| Sulphate (SO <sub>4</sub> )      | mg/l                | 24 hr flow proportional | = 70.47        | 12.966  |
| Phenols (Sum)                    | µg/l                | 24 hr flow proportional | < 0.1          | 0       |

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

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

Discharge Point Code: SW-1

| Substance       | As discharged       |                         |                |          |
|-----------------|---------------------|-------------------------|----------------|----------|
|                 | Unit of Measurement | Sampling Method         | Max Daily Avg. | kg/day   |
| Atrazine        | µg/l                | 24 hr flow proportional | < 0.01         | 0        |
| Dichloromethane | µg/l                | 24 hr flow proportional | < 1            | 0        |
| Simazine        | µg/l                | 24 hr flow proportional | < 0.01         | 0        |
| Toluene         | µg/l                | 24 hr flow proportional | < 0.28         | 0        |
| Tributyltin     | µg/l                | 24 hr flow proportional | < 0.02         | 0        |
| Xylenes         | µg/l                | 24 hr flow proportional | < 1            | 0        |
| Arsenic         | µg/l                | 24 hr flow proportional | < 0.96         | 0        |
| Chromium        | µg/l                | 24 hr flow proportional | < 0.93         | 0        |
| Copper          | µg/l                | 24 hr flow proportional | = 10           | 0.6716   |
| Cyanide         | µg/l                | 24 hr flow proportional | < 5            | 0        |
| Flouride        | µg/l                | 24 hr flow proportional | = 450          | 30.222   |
| Lead            | µg/l                | 24 hr flow proportional | = 0.4          | 0.026864 |
| Nickel          | µg/l                | 24 hr flow proportional | = 0.9          | 0.06044  |
| Zinc            | µg/l                | 24 hr flow proportional | = 29.9         | 2.008    |
| Boron           | µg/l                | 24 hr flow proportional | = 231          | 15.514   |
| Cadmium         | µg/l                | 24 hr flow proportional | < 0.09         | 0        |
| Mercury         | µg/l                | 24 hr flow proportional | < 0.2          | 0        |
| Selenium        | µg/l                | 24 hr flow proportional | = 3            | 0.20148  |
| Barium          | µg/l                | 24 hr flow proportional | < 21.1         | 1.417    |

For Orthophosphate: this monitoring should be undertaken on a sample filtered on 0.45µm filter paper

For Phenols: USEPA Method 604, AWWA Standard Method 6240, or equivalent.

TABLE 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                                 | 33580  |

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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-1d          |
| Grid Ref (12 digits, 6E, 6N) | 263809 / 335772 |

| Parameter                        | Results (mg/l) |          |          |          | Sampling method | Limit of Quantitation | Analysis method / technique                |
|----------------------------------|----------------|----------|----------|----------|-----------------|-----------------------|--|
|                                  | 28/05/08       | 27/08/08 | 26/11/08 | 09/04/09 |                 |                       |  |
| pH                               |                |          |          | = 7.6    | Grab            | 0.01                  | Method 4500-H+/Electrometry                |
| Temperature                      |                |          |          | = 10.2   | Grab            | 0                     | 0  |
| Electrical Conductivity (@ 25°C) |                |          |          | = 172    | Grab            | 0.5                   | Method 2510 B/Electrometry                 |
| Suspended Solids                 | < 3            | = 3      | = 4      | = 5      | Grab            | 3                     | Method 2540 D/Filtration/Dry in 104C       |
| Ammonia (as N)                   |                |          |          | = 0.03   | Grab            | 0.06                  | Method 4500NH3F/Colorimetry                |
| Biochemical Oxygen Demand        | < 2            | < 2      | < 2      | < 2      | Grab            | 2                     | Method 5210 B/Electrometry                 |
| Chemical Oxygen Demand           | = 21           | = 46     | = 27     | = 39     | Grab            | 5                     | Method 5220 D/Spectrophotometry            |
| Dissolved Oxygen                 |                |          |          | = 0      | Grab            | 0                     | DO Meter                                   |
| Hardness (as CaCO <sub>3</sub> ) |                |          |          | = 0      | Grab            | 0                     | 0  |
| Total Nitrogen (as N)            | = 0.13         | < 0.09   | < 0.06   | < 1      | Grab            | 1                     | Calculation                                |
| Nitrite (as N)                   |                |          |          | = 0.003  | Grab            | 0.003                 | Method 4500-NO <sub>2</sub> -B/Colorimetry |
| Nitrate (as N)                   |                |          |          | = 0.27   | Grab            | 0.09                  | Method 4500-NO <sub>3</sub> -H/Colorimetry |
| Total Phosphorous (as P)         | = 0.44         | = 0.71   | = 0.05   | = 0.105  | Grab            | 0.042                 | Method 4500-P E/Colorimetry                |
| OrthoPhosphate (as P)            | = 1.35         | = 2.18   | = 0.16   | = 0.019  | Grab            | 0.004                 | Method 4500-P E/Colorimetry                |
| Sulphate (SO <sub>4</sub> )      |                |          |          | = 2.23   | Grab            | 1.39                  | Method 4500-SO <sub>4</sub> -E/Colorimetry |
| Phenols (Sum)                    |                |          |          | < 0.1    | Grab            | 0.1                   | EPA Method 525 GCMS                        |

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: | No Hardness or Dissolved Oxygen Data Available. |
|----------------------|---|



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

Primary Discharge Point

|                              |                 |
|------------------------------|-----------------|
| Discharge Point Code:        | SW-1            |
| MONITORING POINT CODE:       | aSW-1d          |
| Grid Ref (12 digits, 6E, 6N) | 263809 / 335772 |

| Parameter       | Results (µg/l) |  |  |  | Sampling method | Limit of Quantitation | Analysis method / technique              |
|-----------------|----------------|--|--|--|-----------------|-----------------------|--|
|                 | 09/04/09       |  |  |  |                 |                       |  |
| Atrazine        | < 0.01         |  |  |  | Grab            | 0.01                  | USEPA Method 610 HPLC                    |
| Dichloromethane | < 1            |  |  |  | Grab            | 1                     | USEPA Method 524 GCMS                    |
| Simazine        | < 0.01         |  |  |  | Grab            | 0.01                  | USEPA Method 610 HPLC                    |
| Toluene         | < 0.28         |  |  |  | Grab            | 0.28                  | USEPA Method 524.2 GCMS                  |
| Tributyltin     | < 0.02         |  |  |  | Grab            | 0.02                  | Subcontracted Test GCMS                  |
| Xylenes         | < 1            |  |  |  | Grab            | 1                     | USEPA Method 524.2 GCMS                  |
| Arsenic         | < 0.96         |  |  |  | Grab            | 0.96                  | USEPA Method 3125B ICPMS                 |
| Chromium        | < 0.93         |  |  |  | Grab            | 0.93                  | USEPA Method 3125B ICPMS                 |
| Copper          | < 0.2          |  |  |  | Grab            | 0.2                   | USEPA Method 3125B ICPMS                 |
| Cyanide         | < 5            |  |  |  | Grab            | 5                     | Hach Water Analysis Handbook 2nd Edition |
| Flouride        | = 180          |  |  |  | Grab            | 0.03                  | Method 4500 F - E Colorimetry            |
| Lead            | < 0.38         |  |  |  | Grab            | 0.38                  | USEPA Method 3125B ICPMS                 |
| Nickel          | = 1.1          |  |  |  | Grab            | 0.47                  | USEPA Method 3125B ICPMS                 |
| Zinc            | < 4.6          |  |  |  | Grab            | 4.6                   | USEPA Method 3125B ICPMS                 |
| Boron           | = 160.8        |  |  |  | Grab            | 4.2                   | USEPA Method 3125B ICPMS                 |
| Cadmium         | < 0.09         |  |  |  | Grab            | 0.09                  | USEPA Method 3125B ICPMS                 |
| Mercury         | < 0.2          |  |  |  | Grab            | 0.2                   | USEPA Method 3125B ICPMS                 |
| Selenium        | = 1            |  |  |  | Grab            | 0.74                  | USEPA Method 3125B ICPMS                 |

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|--------|--------|--|--|--|------|------|--------------------------------|
| Barium | = 30.9 |  |  |  | Grab | 0.74 | USEPA<br>Method 3125B<br>ICPMS |
|--------|--------|--|--|--|------|------|--------------------------------|

|                      |  |
|----------------------|--|
| Additional Comments: |  |
|----------------------|--|

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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-1u          |
| Grid Ref (12 digits, 6E, 6N) | 262979 / 335758 |

| Parameter                        | Results (mg/l) |          |          |          | Sampling method | Limit of Quantitation | Analysis method / technique                |
|----------------------------------|----------------|----------|----------|----------|-----------------|-----------------------|--|
|                                  | 28/05/08       | 27/08/08 | 26/11/08 | 09/04/09 |                 |                       |  |
| pH                               |                |          |          | = 7.5    | Grab            | 0.01                  | Method 4500-H+/Electrometry                |
| Temperature                      |                |          |          | = 10     | Grab            | 0                     | 0  |
| Electrical Conductivity (@ 25°C) |                |          |          | = 166    | Grab            | 0.5                   | Method 2510 B/Electrometry                 |
| Suspended Solids                 | < 3            | = 8      | = 3      | = 10     | Grab            | 3                     | Method 2540 D/Filtration/Dry in 104C       |
| Ammonia (as N)                   |                |          |          | = 0.08   | Grab            | 0.06                  | Method 4500NH3F/Colorimetry                |
| Biochemical Oxygen Demand        | < 2            | < 2      | < 2      | < 2      | Grab            | 2                     | Method 5210 B/Electrometry                 |
| Chemical Oxygen Demand           | = 20           | = 47     | = 32     | = 36     | Grab            | 5                     | Method 5220 D/Spectrophotometry            |
| Dissolved Oxygen                 |                |          |          | = 0      | Grab            | 0                     | DO Meter                                   |
| Hardness (as CaCO <sub>3</sub> ) |                |          |          | = 0      | Grab            | 0                     | 0  |
| Total Nitrogen (as N)            | = 0.371        | < 0.09   | < 0.06   | < 1      | Grab            | 1                     | Calculation                                |
| Nitrite (as N)                   |                |          |          | = 0.01   | Grab            | 0.003                 | Method 4500-NO <sub>2</sub> -B/Colorimetry |
| Nitrate (as N)                   |                |          |          | = 0.31   | Grab            | 0.09                  | Method 4500-NO <sub>3</sub> -H/Colorimetry |
| Total Phosphorous (as P)         | = 0.12         | = 0.14   | = 0.09   | = 0.12   | Grab            | 0.042                 | Method 4500-P E/Colorimetry                |
| OrthoPhosphate (as P)            | = 0.371        | = 0.435  | = 0.261  | = 0.055  | Grab            | 0.004                 | Method 4500-P E/Colorimetry                |
| Sulphate (SO <sub>4</sub> )      |                |          |          | = 2.39   | Grab            | 1.39                  | Method 4500-SO <sub>4</sub> -E/Colorimetry |
| Phenols (Sum)                    |                |          |          | < 0.1    | Grab            | 0.1                   | EPA Method 525 GCMS                        |

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: | No Hardness or Dissolved Oxygen Data Available. |
|----------------------|---|

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

Primary Discharge Point

|                              |                 |
|------------------------------|-----------------|
| Discharge Point Code:        | SW-1            |
| MONITORING POINT CODE:       | aSW-1u          |
| Grid Ref (12 digits, 6E, 6N) | 262979 / 335758 |

| Parameter       | Results (µg/l) |  |  |  | Sampling method | Limit of Quantitation | Analysis method / technique              |
|-----------------|----------------|--|--|--|-----------------|-----------------------|--|
|                 | 09/04/09       |  |  |  |                 |                       |  |
| Atrazine        | < 0.01         |  |  |  | Grab            | 0.01                  | USEPA Method 610 HPLC                    |
| Dichloromethane | < 1            |  |  |  | Grab            | 1                     | USEPA Method 524 GCMS                    |
| Simazine        | < 0.01         |  |  |  | Grab            | 0.01                  | USEPA Method 610 HPLC                    |
| Toluene         | < 0.28         |  |  |  | Grab            | 0.28                  | USEPA Method 524.2 GCMS                  |
| Tributyltin     | < 0.02         |  |  |  | Grab            | 0.02                  | Subcontracted Test GCMS                  |
| Xylenes         | < 1            |  |  |  | Grab            | 1                     | USEPA Method 524.2 GCMS                  |
| Arsenic         | = 1.7          |  |  |  | Grab            | 0.96                  | USEPA Method 3125B ICPMS                 |
| Chromium        | < 0.93         |  |  |  | Grab            | 0.93                  | USEPA Method 3125B ICPMS                 |
| Copper          | = 3            |  |  |  | Grab            | 0.2                   | USEPA Method 3125B ICPMS                 |
| Cyanide         | < 5            |  |  |  | Grab            | 5                     | Hach Water Analysis Handbook 2nd Edition |
| Flouride        | = 180          |  |  |  | Grab            | 0.03                  | Method 4500 F - E Colorimetry            |
| Lead            | = 1.8          |  |  |  | Grab            | 0.38                  | USEPA Method 3125B ICPMS                 |
| Nickel          | = 2.7          |  |  |  | Grab            | 0.47                  | USEPA Method 3125B ICPMS                 |
| Zinc            | < 4.6          |  |  |  | Grab            | 4.6                   | USEPA Method 3125B ICPMS                 |
| Boron           | = 99.4         |  |  |  | Grab            | 4.2                   | USEPA Method 3125B ICPMS                 |
| Cadmium         | = 1            |  |  |  | Grab            | 0.09                  | USEPA Method 3125B ICPMS                 |
| Mercury         | < 0.2          |  |  |  | Grab            | 0.2                   | USEPA Method 3125B ICPMS                 |
| Selenium        | = 3            |  |  |  | Grab            | 0.74                  | USEPA Method 3125B ICPMS                 |

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|--------|--------|--|--|--|------|------|--------------------------------|
| Barium | = 38.4 |  |  |  | Grab | 0.74 | USEPA<br>Method 3125B<br>ICPMS |
|--------|--------|--|--|--|------|------|--------------------------------|

|                      |  |
|----------------------|--|
| Additional Comments: |  |
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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><br><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 of Application                | 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,   | Section B1 of Application                | 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 B.2 of Application               | Yes                         |
| (d)  | state the population equivalent of the agglomeration to which the application relates,  | Section B.9 of Application               | 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,   | Attachment D.1                           | 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 F of Application                 | 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 E                 | 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,  | Attachment E.4                           | 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 G of Application                 | Yes                         |
| (j)  | give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,   | N/A                                      | 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,  | Section F.1 of Application               | Yes                         |
| (l)  | give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,  | Section G of Application & Attachment G2 | Yes                         |
| (m)  | give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.  | N/A                                      | Yes                         |
| (n)  | Any other information as may be stipulated by the Agency.   | N/A                                      | Yes                         |
| <b>Regulation 16(3)</b><br><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 B.8                           | Yes                         |
| (b)  | where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,   | N/A                                      | Yes                         |
| (c)  | Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -  | See below                                | 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   | Attachments B.3, C.2 & D.2               | Yes                         |
| (c) (ii)   | the point or points at which monitoring and sampling are undertaken or are to be undertaken,  | Attachments B.3, D.1 & E.3               | Yes                         |
| (d)  | such fee as is appropriate having regard to the provisions of Regulations 38 and 39.  | Section B.9(iii) of Application          | Yes                         |

| <b>Regulation 16(4)</b><br>An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.   |  | <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                      | Yes                         |
| <b>Regulation 16(5)</b><br>For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.  |  | <b>Attachment Number</b> | <b>Checked by Applicant</b> |
| 1  | Signed original.   | Yes                      | Yes                         |
| 2  | 2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.   | Yes                      | Yes                         |
| 3  | 1 CD of geo-referenced digital files provided.   | Yes                      | Yes                         |
| <b>Regulation 17</b><br>Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency |  | <b>Attachment Number</b> | <b>Checked by Applicant</b> |
| 1  | EIA provided if applicable   | Yes                      | Yes                         |
| 2  | 2 hardcopies of EIS provided if applicable.  | Yes                      | Yes                         |
| 3  | 2 CD versions of EIS, as PDF files, provided.  | Yes                      | Yes                         |

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