Comhairle Contae Mhuineacháin
Monaghan County Council

Acmhainní Daonna
Human Resource
047 30586

Airgeadas
Finance
047 30589

Na Bóithre
Roads
047 30597

Clár na dToghthóirí
Register of Electors
047 30547

Comhshaol
Environment
047 30593

Deontais Ardoideachais
Higher Education Grants
047 30550

Na hEalaíona
Arts
047 71114

Iasachtaí /Deontais Tithíochta
Housing Loans/Grants
047 30527

Leabharlann an Chontae
County Library
047 51143

Mótarcháin
Motor Tax
047 81175

Músaem an Chontae
County Museum
047 82928

Pleanáil
Planning
047 30532

Pobal & Fiontar
Community & Enterprise
047 30500

Rialú Dóiteáin/Foirgnimh
Fire/Building Control
047 30521

Seirbhísí Uisce
Water Services
047 30504

Administration, Environmental Licensing Programme,
Office of Climate, Licence and Resource Use,
Environmental Protection Agency,
Headquarters,
P.O. Box 3000,
Johnstown Castle Estate,
Co. Wexford.

27th September 2012

Re: Application for a Waste Water Discharge Certificate of Authorisation for Doohamlet Waste Water Treatment Works, Monaghan.

Dear Sir/Madam,

Please find enclosed signed original application forms in respect of an application for the Waste Water Treatment Works serving the agglomeration of Doohamlet.

Doohamlet was initially applied for as a Discharge Licence, but was withdrawn (ref: letter dated 18th January 2012 to EPA) as its current operating P.E is under 500 P.E. As outlined in letter dated 28th March 2012 from the EPA, the fee for the Certificate of Authorisation for Doohamlet of €3,000 will be retained from the initial fee of €10,000 submitted with the initial discharge Licence application and a refund will be issued in due course.

Also find enclosed one further hard copy of these documents, plus two copies in electronic searchable PDF format on CD-ROM with the geo-referenced drawings included.

Monaghan County Council confirms that the content of the electronic files and the accompanying CD-ROMS are a true copy of the original hardcopy application.

Please contact the undersigned if you require any further information or documentation.

Comhairle Contae Mhuineacháin, Oifigí an Chontae, An Gleann, Muineachán, Éire.
Monaghan County Council, Council Offices, The Glen, Monaghan, Ireland.
(C) 00353 47 30500 00353 47 82739 info@monaghancoco.ie www.monaghan.ie

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Fire/Building Control
047 30521

Seirbhísí Uisce
Water Services
047 30504

Yours Sincerely,

27/09/12

Mark Johnston,
Senior Executive Engineer,
Water Services Section,
Monaghan County Council.
047 30513

DOOHAMLET WASTE WATER TREATMENT WORKS

WASTE WATER CERTIFICATE OF AUTHORISATION APPLICATION

Monaghan County Council
County Offices,
The Glen,
Co. Monaghan.

SEPTEMBER 2012

ATTACHMENTS TABLE OF CONTENTS

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

Attachment F.1: Table F.1 (i)(a) Surface Water Monitoring (Primary Discharge Point – Downstream

Table F.1 (i)(b) Surface Water Monitoring (Dangerous Substances- Primary Discharge Point) – Downstream

Table F.1 (i)(a) Surface Water Monitoring (Primary Discharge Point – Upstream

Table F.1 (i)(b) Surface Water Monitoring (Dangerous Substances- Primary Discharge Point) – Upstream

SECTION G PROGRAMME OF IMPROVEMENTS

Attachment G.2: Woodford Water Management Unit (WMU) Action Plan for the North West River Basin District

Monaghan County Councils Phosphate Implementation Report 2006

Environmental Protection Agency
An Ghníomhaireacht um Chaomhnú Comhshaoil

Waste Water Discharge Certificate of Authorisation Application Form

D0 473

EPA Ref. Nº: *(Office use only)*	

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

Tracking Amendments to Draft Application Form

Version No.	Date	Amendment since previous version	Reason
V.1.	12/06/2009	N/A	
V.2.	17/06/2009	Delete reference to Design Build and Operate	To accurately reflect the information required for the small schemes programme
		Delete the requirement to provide contact information for the associated waste water treatment plant	To accurately reflect the information required and the scale of the waste water works
		Replace references to the Water Services investment Programme with the Small Schemes Programme	To accurately reflect the information required for the small schemes programme
		Update references to new legislation	To reflect changes in legislation
		Inclusion of the requirement to submit information on private WWTPs within the agglomeration.	To obtain an overview of all discharges within the agglomeration.
V.3.	17/02/2012	Amended Section B.6 and Section F.1 to take account of the requirements of European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) in terms of Appropriate Assessment under Article 6(3) of the Habitats Directive (92/43/EEC).	To accurately reflect the Habitats Regulations 2011 (S.I. No. 477 of 2011) requirements.

CONTENTS

ABOUT THIS APPLICATION FORM

This form is for the purpose of making an application for a Waste Water Discharge Certificate of Authorisation under the Waste Water Discharge (Authorisation) Regulations, 2007, as amended or for the review of an existing Waste Water Discharge Certificate of Authorisation.

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

A valid application for a Waste Water Discharge Certificate of Authorisation must contain the information prescribed in the Waste Water Discharge (Authorisation) Regulations, 2007, as amended. Regulation 24 of the Regulations sets out the statutory requirements for information to accompany a Certificate of Authorisation 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 with respect to Regulation 24 requirements, please complete the Regulation 24 Checklist provided in the following web based tool: http://78.137.160.73/epa_wwd_licensing/

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, as amended. **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 Certificates of Authorisation, and for the processing of reviews of such Certificates, appears in the Waste Water Discharge (Authorisation) Regulations, 2007, as amended, and is summarised below. The application fees that shall accompany an application are listed in the Third Schedule to the Regulations.

An application for a Certificate of Authorisation must be submitted on the appropriate form (available from the Agency website – http://www.epa.ie/whatwedo/licensing/wwda/) 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 (under notices provided for in the Regulations) 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 Certificate of Authorisation is an offence under the Waste Water Discharge (Authorisation) Regulations, 2007, as amended.

The provision of information in an application for a waste water discharge Certificate of Authorisation which is false or misleading is an offence under Regulation 35 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended.

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

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

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

SECTION A: NON-TECHNICAL SUMMARY

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

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

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

A description of:

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

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

Non Technical Summary

Monaghan County Council is applying to the Environmental Protection Agency for a Certificate of Authorisation for the existing Waste Water Works at Doohamlet. The Waste Water Treatment Works, located at NGR 276588E 320721N in the town land of Doohamlet, Co. Monaghan comprises a network of gravity sewers and a wastewater treatment plant at Doohamlet.

The Waste Water Treatment Works was constructed by a developer as part of a housing development and completed in 2007. Monaghan County Council is in the process of taking over the treatment plant from the developer, this process is 90% complete, with the transfer of land element outstanding. The plant will be supervised/manned for 2 hours, 2 days per week, Monday and Thursday, giving a total of 4 hours per week. Some remedial works are required at the WWTP since the take over commenced, as it was not operating properly due to inadequate maintenance and supervision. Monaghan County Council carried out desludging of the plant to enable it to run properly in early 2012, further electrical works including control panels, cabling, ducting and lighting are required and commissioning of a ferric dosing unit at the treatment plant, it is envisaged that these works should be complete by the end of 2012.

The Doohamlet WWTP consists of a primary settlement tank, a rotating biological contactor final clarifier, sludge return pump chamber and chemical dosing unit. The chemical dosing unit is not currently operational, as stated above, it is envisaged that commissioning of this unit should be complete by the end of

2012. Treated effluent is pumped to the receiving Toome stream. There are no storm overflows at the Doohamlet WWTP. There is a second pipe visible at a lower level under the primary discharge pipe in the stream, Monaghan County Council confirms that this pipe was installed to cater for future expansion of the WWTP by the developer and is therefore dormant.

The Waste Water Treatment Works design capacity is 600 PE. The Works currently collects and treats domestic effluent from a population equivalent of approximately 300. The Waste Water Treatment Plant treats in the region of 54 cubic metres of effluent every day (based on current PE).

Sampling of the treated effluent carried out in August 2012 gave a BOD concentration of <2mg/l, COD concentration of <5mg/l and suspended solids concentration of 8mg/l. Concentrations of nutrients were as follows; orthophosphate 4.36mg/l (P), Total Phosphorus 4.46mg/l (P) and Total Nitrogen 19.78 mg/l (N).

The primary discharge SW1(P) from the Doohamlet Waste Water Plant discharges to the Toome stream which is a tributary of Major Lough Stream, (known locally as the Dromore River) at National Grid Reference 276560E 320690N in the Town land of Doohamlet Co. Monaghan and the associated plant is located at National Grid Reference 276588E, 320721N also in the town land of Doohamlet, Co. Monaghan.

There are no monitoring stations on the Toome stream, the nearest EPA monitoring stations are on the Major Lough Stream, there is a station 0015 located at a bridge North East of Corryloan Lough (upstream from where the Toome stream joins Lough Major Stream) and at the Bridge downstream of Ballintra (Station 0036). The Toome stream's overall status is 'good' with overall objective to 'protect' it and retain this status, the WWTP is considered 'Not at risk' to the stream, however, it is classified as 'at risk' from unsewered areas and diffuse pollution (WFD website and reports). This status is by extrapolation from the surrounding rivers/water bodies in the area. The Major Lough Stream's status is also 'good'. The Toome stream and Major Lough Stream are in the North West River Basin District, and in the district of the Woodford Water Management Unit (WMU) action plan. There are no WWTP actions/measures outlined for the Doohamlet WWTP under the Woodford WMU.

Monitoring of the Doohamlet WWTP has commenced fully in 2012, in compliance with the Urban Waste Water Regulations 2001-2010, there is one set of results available to date this year, there are also two further monitoring results from October 2011 and April 2009. Monaghan County Councils ambient monitoring results dated 09/08/12 concur with the 'good' status of the stream, with upstream monitoring results of orthophosphate of 0.014 mg/l P recorded, ammonia levels of <0.01 mg/l NH3-N, and BOD of 0.1mg/l, the downstream results recorded are orthophosphate of 0.017mg/l (P), ammonia levels of <0.01 mg/l NH3-N, and BOD of 0.1mg/l. Dangerous substances concentrations analysed in April 2009 upstream were below detection level for 4 of the 19 parameters, and below detection level for 5 of the 19 parameters analysed downstream, no levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001. From the effluent and ambient monitoring results taken in August 2012, the Doohamlet WWTP is compliant with the Urban Waste Water Reg's 2001-2010 and the receiving Toome stream results are compliant with the Surface Water Regulations 2009.

There is no EPA flow monitoring station located nearby the discharge point, however estimated flows are available for this stream on the EPA hydrometric

website, assimilative capacities of the stream in relation to the Doohamlet WWTP effluent discharge are calculated in section F of this application.

SECTION B: GENERAL

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

B.1 Agglomeration Details

Name of Agglomeration:	Doohamlet

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 Certificate of Authorisation application relates. It should have the boundary of the agglomeration to which the Certificate of Authorisation application relates clearly marked in red ink.

Name*:	Monaghan County Council
Address:	Water Services Section
	The Glen,
	Monaghan.
Tel:	047 30500
Fax:	047 82739
e-mail:	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.

Name*:	Mr Mark Johnston
Address:	Water Services Section,
	The Glen,
	Monaghan.
Tel:	047 30500
Fax:	047 82739
e-mail:	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

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

*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 Certificate of Authorisation application.

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

Attachment included	Yes	No
	√	

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

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

Name*:	Mark T. Johnston (Engineer)
Address:	Doohamlet WWTP,
	Doohamlet,
	Co. Monaghan
Grid ref (6E, 6N)	276588E 320721N
Level of Treatment	Secondary

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

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

Attachment included	Yes	No
	√	

B.3 Location of Primary Discharge Point

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

Discharge to	Surface Water
Type of Discharge	Open Pipe Discharge
Unique Point Code	SW1(P)
Location	Doohamlet, Co. Monaghan.
Grid ref (6E, 6N)	276560E 320690N

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

Attachment included	Yes	No
	√	

B.4 Location of Secondary Discharge Point(s)

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

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

*Where a septic tank is in existence simultaneous to a package plant within an agglomeration, discharges from the septic tank shall be considered as a secondary discharge.

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

Attachment included	Yes	No
		√

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

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

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

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

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

B.6 Planning Authority and/or Public Authority

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

Name:	Monaghan County Council
Address:	County Offices,
	The Glen
	Monaghan
	Co. Monaghan
Tel:	047 30500
Fax:	047 82739
e-mail:	planning@monaghancoco.ie

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

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

A Part 8 planning Application or EIS was not required for this development.

Local Authority Planning File Reference N°:	03147 (Developer file: Monaghan County Council)

Attachment B.6 should contain ***the most recent*** planning permission, including a copy of ***all*** conditions, a copy of the planning inspector's report 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.*

Where applicable, provide a copy of any screening for Appropriate Assessment report and Natura Impact Statement (NIS) that was prepared for consideration by any planning/public authority as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477 of 2011) in relation to the waste water works which is the subject of this application. Where a determination that an Appropriate Assessment is required has been made by any planning/public authority in relation to the waste water works, a copy of that determination and any screening report and NIS, and any supplemental information furnished in relation to any such report or statement, which has been provided to the planning/public authority for the purposes of the Appropriate Assessment, shall be included in **Attachment B.6.**

Attachment included	Yes	No
	√	

B.7 Other Authorities

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

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

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

Within the SFADCo Area	Yes	No
		√

B.7 (ii) Health Services Executive Region

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

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

B. 8(i) Population Equivalent of Agglomeration

TABLE B.8.1 POPULATION EQUIVALENT OF AGGLOMERATION

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

Population Equivalent	300– Current PE 600 – Design PE
Data Compiled (Year)	2012
Method	Based on house and property count

The Doohamlet WWTW currently serves housing developments, a school, community centre and a pub.

B.8 (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 waters.

As stated Chapter 3 Settlement Strategy of the Monaghan County Development Plan 2007-2013, there is 75 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. ha (70% of lands available)	Hsg. Capacity @ 15 houses per hectare
Doohamlet	75	44	31	465

At low density (15 houses per hectare) it is anticipated that approximately 465 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 1442 based on an average household occupancy of 3.1. This would give a PE of 2042 (worst case scenario) which would leave the treatment plant well over capacity. However, presently in September 2012, heading towards the end of the current development plan (2007-2013) the house count within the catchment area of the Doohamlet WWTP network indicates that the plant is currently operating at 300 P.E. which is half of the design capacity of the WWTP. There is therefore adequate capacity within the WWTP to cater for another 97 housing units between now and the end of the current development plan, should they be realised.

As noted above, should all lands available within the development envelope be developed and connected to the works during the lifetime of the Certificate of Authorisation, the design capacity of the plant would be exceeded. It must be noted however that granting of permissions to develop and their associated conditions will reflect the capacity of the plant.

It also should be noted that in the current economic climate, it is probable that this amount of housing within the timeframe of the Certificate of authorisation will not be realised.

B.8 (iii) FEES

State the relevant Class of waste water discharge as per Regulation 5, and the appropriate fee as per Columns 2 or 3 of the Third Schedule of the Waste Water Discharges (Authorisation) Regulations 2007, as amended.

Class of waste water discharge	Fee (in €)
Discharges from agglomerations with a population equivalent of less than 500	€3,000

Appropriate Fee Included	Yes	No
	√	

B.9 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 small schemes programme) allocated to the capital project. Provide details on the extent and type of work to be undertaken and the likely timeframes for this work to be completed.

No Capital Investment Programme has been prioritised for the development.

Attachment B.9 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.10 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 to 2011.

There have been no Section 63 notices issued by the Agency in relation to the Doohamlet 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.10 should contain a summary of any relevant correspondence issued in relation to a Section 63 notice.

Attachment included	Yes	No
		√

B.11 Foreshore Act Licences.

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

Not Applicable.

Attachment B.11 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**
		√

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 are no Storm Water Overflow's within the works.

- 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 network.

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.

Not applicable.

Doohamlet Waste Water Treatment Plant

General

The Waste Water Treatment Works, located at NGR 276588E 320721N in the town land of Doohamlet, Co. Monaghan comprises a network of gravity sewers and a wastewater treatment plant at Doohamlet. The Doohamlet Waste Water Treatment Plant (WWTP) provides treatment for a design load of 600 population equivalent.

There are no pumping stations associated with the works.

Treatment Process

The waste water treatment works consist of a primary settlement tank, rotating biological contactor, final settlement tank, sludge return pump chamber, chemical dosing unit facility and final effluent pump chamber.

The sewage flow enters the primary tank where the primary solids settle and floating scum is held. The primary settlement tank is desludged periodically. The flow then enters the rotating biological contactor (RBC) which is housed in a GRP container, there are two stages in the RBC, the first stage of the biozone contains the media bank, the second stage of the biozone is hydraulically sealed from the first stage and maintains a constant water level. This second stage is fed via a bucket lift transfer (Managed flow) system contained in the first stage of the biozone. The RBC contains rotating baffles with polypropylene media attached to the baffles, the rotating baffles are alternately submerged in the effluent/exposed to air within the RBC encouraging an aerobic, biologically active film of micro-organisms (biomass) to become established on the media sheets, thus oxidising the pollutants in the sewage. The mixture of sludge and final effluent then flows into the final settlement tank where the sludge settles to the bottom of the tank and is then pumped back to the primary settlement tank. The treated effluent then flows into the settled effluent pump sump (which houses a duty and standby pump) and is pumped to the receiving Toome stream via a flow meter chamber which measures the effluent volume.
There is a dosing facility contained within a small shed at the WWTP which is set up to dose into the RBC, this is currently not operational. As stated in section A of this application, it is planned to commission this unit for dosing with Alum/Ferric chloride to aid the removal of Phosphorus at the WWTP by the end of this year.
There is a second pipe visible at a lower level under the primary discharge pipe in the stream, Monaghan County Council confirms that this pipe was installed to cater for future expansion of the WWTP by the developer and is therefore currently dormant.

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

Primary Discharge Point - SW1(P)

The primary discharge point SW1(P) discharges to a small stream named Toome stream at National Grid Reference 276560E 320690N which is a tributary of the Major Lough Stream. The location of the discharge is shown on **Drawing 3 of Attachment B3.**

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

Attachment included	Yes	No
	√	

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 discharges are made or are to be made.

Details of all discharges of waste water from the agglomeration should be submitted via the following web based link: http://78.137.160.73/epa_wwd_licensing/. ***The applicant should address in particular all discharge points where the substances outlined in Tables 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions' 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(i) Discharges to Surface Waters

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Discharge Point Details', 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions', should be completed for the primary discharge point from the agglomeration and for **each** secondary discharge point, where relevant. Table 'Discharge Point Details' 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 waste water treatment plant this data should also be provided in response to Section D.1(i).

Monitoring data available to date for the influent for Doohamlet WWTP 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(i)**

Attachment included	Yes	No
	√	

D.1(ii) Discharges to Groundwater

Not Applicable.

Details of all discharges of waste water from the agglomeration should be supplied via the following web based link: http://78.137.160.73/epa_wwd_licensing/. Tables 'Discharge Point Details', 'Emissions to Surface/Groundwaters and 'Dangerous Substances Emissions', should be completed for the primary discharge point from the agglomeration and for **each** secondary discharge point, where relevant. Table 'Discharge Point Details' 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 waste water treatment plant this data should also be provided in response to Section D.1(ii).

Supporting information should form **Attachment D.1(ii)**

Attachment included	Yes	No
		√

D.1 (iii) Private Waste Water Treatment Plants

Provide information on all independently owned/operated private waste water treatment plants operating within the agglomeration. Submit a copy of the Section 4 discharge licence issued under the Water Pollution Acts 1977 to 1990, as amended for each discharge.

Not Applicable.

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 Co. Co.	River	Toome Stream (Tributary of Major Lough Stream)	'Good' Status	276560E	320690N

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

SECTION E: MONITORING

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

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

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

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.**

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 'Discharge Point Details' via the following web based link: http://78.137.160.73/epa_wwd_licensing/.

Not Applicable.

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 monitoring.

A flow monitor is in place at the primary discharge. A mobile composite sampler is used to take samples of the effluent.

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 discharge and its effect on the receiving environment should be considered.

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

Environmental Monitoring & Sampling

Monaghan Co. Co. commenced sampling and analyses for the Doohamlet WWTP in 2012 as take over of the WWTP from a private developer is almost complete. Monaghan County Council staff carries out the collection of the samples from the discharge of the Doohamlet Waste Water Treatment Plant including the samples of the water upstream and downstream of the primary discharge in the Toome stream. The samples are then delivered by courier to Euro Environmental

Management Ltd (trading as Fitz Scientific), Drogheda, Co. Louth for analyses. Details of their accreditation of analysis are included in **Attachment E.2**. of this application. Sampling of the primary discharge from the Doohamlet Waste Water Treatment Works will be undertaken every quarter, the monitoring of the upstream and downstream receiving Toome Stream locations will also be taken every quarter. Composite samples (mobile sampler) are taken of the effluent and grab samples of the influent, upstream and downstream samples for analyses.

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.

Further details on the annual sampling programme schedule commencing in 2012 for Doohamlet are detailed below.

Plant Name	Design	Min No of Samples	Raw Influent	Final Effluent	River Up Stream	River Down stream	Total
Doohamlet	PE 600	4	4	4	4	4	16

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

Attachment included	Yes	No
	√	

E.3. Tabular data on Monitoring and Sampling Points

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

PT_CD	PT_TYPE	MON_TYPE	EASTING	NORTHING	VERIFIED
SW1(P)s	Primary	S	276560	320690	N
aSW1(P)u	Primary	M	276579	320683	N
aSW1(P)d	Primary	M	276539	320750	N

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

E.4 Sampling Data

Regulation 24(i) of the Waste Water Discharge (Authorisation) Regulations 2007, as amended, requires all applicants in the case of an existing discharge 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 24(m) 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

Doohamlet Waste Water Treatment Works will comply with the monitoring and treatment standards specified in the Urban Waste Water Treatment Regulations 2001 -2010.

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.

Clear and concise 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) and/or the ambient environmental conditions of the groundwater upgradient and downgradient of any discharges.

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. Impact on Receiving Surface water or Groundwater

- Details of monitoring of the receiving surface water should be supplied via the following web based link:http://78.137.160.73/epa_wwd_licensing/. Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' 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 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of surface water shall be carried out at not less than two points, one upstream from the discharge location and one downstream.

The outfall from the Doohamlet Waste Water Plant discharges to the Toome stream (Tributary of Major Lough Stream) at National Grid Reference 276560E 320690N in the Town land of Doohamlet Co. Monaghan.

Sampling has commenced by Monaghan County Council in 2012, there is one set of results available for August 2012 for the treated effluent resulting in a BOD concentration of <2mg/l, COD concentration of <5mg/l and suspended solids concentration of 8mg/l. Concentrations of nutrients were as follows; orthophosphate 4.36mg/l (P), Total Phosphorus 4.46mg/l (P) and Total Nitrogen 19.78 mg/l (N). As stated in this application, dosing will be commissioned at the WWTP by the end of 2012, for the reduction of Phosphorus in the effluent.

The Toome stream is not designated as salmonid water under EC (Quality of Salmonid Water) Regulations, 1988 nor is it identified as sensitive water in terms of the Urban Waste Water Treatment Regulations 2001. The river is not designated as an SPA, SAC or NHA. There are no monitoring stations on the Toome stream itself, the nearest EPA monitoring stations are on the Major Lough Stream, there is a station 0015 located at a bridge North East of Corryloan Lough (upstream from where the Toome stream joins Lough Major Stream) and at the Bridge downstream of Ballintra (Station 0036). The Toome stream's overall status is 'good' with overall objective to 'protect' it and retain this status, the WWTP is considered 'Not at risk' to the stream, however, it is classified as 'at risk' from unsewered areas and diffuse pollution (WFD website and reports). This status is

by extrapolation from the surrounding rivers/water bodies in the area. The Major Lough Stream's status is also 'good'. The Toome stream and Major Lough Stream are in the North West River Basin District, and in the district of the Woodford Water Management Unit (WMU) action plan. There are no WWTP actions/measures outlined for the Doohamlet WWTP under the Woodford WMU (WFD website and reports).

As stated previously, monitoring of the Doohamlet WWTP has commenced fully in 2012, in compliance with the Urban Waste Water Regulations 2001-2010, there is one set of results available to date this year, there are also two further monitoring results sets available from October 2011 and April 2009 tabulated in **Tables F.1 (i) (a)** & **(b)** for the primary discharge point and **Tables F.1(i)a aSW1(P)u** and **aSW1(P)d** for the ambient monitoring. These results are compliant with the UWWT Reg's 2001-2010. Monaghan Co. Co. will continue to monitor the stream both upstream and downstream of the discharge from the Waste Water Works. These locations are shown on **Drawing 4** of **Attachment B3**. Monaghan County Councils ambient monitoring results dated 09/08/12 concur with the 'good' status of the stream, with upstream monitoring results of orthophosphate of 0.014 mg/l P recorded, ammonia levels of <0.01 mg/l NH3-N, and BOD of 0.1mg/l, the downstream results recorded are orthophosphate of 0.017mg/l (P), ammonia levels of <0.01 mg/l NH3-N, and BOD of 0.1mg/l. Dangerous substances concentrations analysed relate to a once-off sample collected in April 2009 and are presented in **Tables F.1(i)b aSW(P)u** and **aSW(P)d**, the upstream results were below detection level for 4 of the 19 parameters tested, and below detection level for 5 of the 19 parameters analysed downstream, no levels exceeded the standards as outlined in the Water Quality (Dangerous Substances) Regulations 2001. From the effluent and ambient monitoring results taken in August 2012, it is evident that the Doohamlet WWTP is compliant with the Urban Waste Water Reg's 2001-2010 and the receiving Toome stream results are compliant with the Surface Water Regulations 2009.

There are no EPA flow monitoring stations located nearby the discharge point, however estimated flows are available for this stream on the EPA hydrometric website, the estimated 95% flow for this stream is 0.031m^3/s, which is used in the assimilative capacity calculations of the stream in relation to the Doohamlet WWTP effluent discharge:

Assimilative Capacity of Receiving Water

Using the Toome Stream 95%ile flow rate outlined above and the Toome Stream background water quality (Monaghan Co. Co. Data) and the Surface Water Regulations 2009, an assimilative capacity assessment of the River has been carried out using the 95-percentile flow conditions for BOD, Molybdate Reactive Phosphorous and total Ammonia.

The assessment has been undertaken on the basis of an average discharge flow to the receiving water from the Wastewater Treatment Plant, of 54m^3/day and the background concentration upstream in the receiving water based on the MCC result in August 2012 (the other MCC results are not accurate enough as <2mg/l), there is no EPA data available upstream for this figure.

BOD Assimilative Capacity

95-percentile Flow Conditions
The BOD assimilative capacity of the river under 95-percentile flow conditions is calculated as:

AC = (C_{max} – C_{back}) x 86.4 x F

where,

AC = Assimilative capacity
$\mathbf{C_{max}}$ = maximum permissible concentration (EQS) in the river (mg/l) (in this case taken as a maximum of 2.6mg/l) (SW Reg's 2009 – good status)
$\mathbf{C_{back}}$ = background upstream concentration (mg/l) (0.1mg/l – MCC data)
86.4 = constant to correct units to kg/day
F = flow in the river (m^3/s) 95%ile flow (0.031m^3/s or 2,678,400l/d)

Therefore,

AC = (2.6-0.1) x 86.4 x 0.031

AC = 6.70kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 54m^3/day, and average BOD 2mg/l (refer table 1, attachment E4), the total amount of BOD discharged to the Toome Stream shall be:

(54,000l/day x 2mg/l)/1,000,000 (mg to Kg) = **0.108kg/day**

This constitutes **1.61**% of the assimilative capacity of the Toome Stream.

The Mass balance formula is used to calculate the **resulting BOD concentration in the river** resulting from the effluent discharge:

$$T = \frac{FC + fc}{F + f}$$

Where;
T = resultant concentration due to the discharge (mg/l)
F = 95%ile flow of receiving water (m^3/s) (95% flow of 0.031m^3/s or 2,678,400l/d)
c = average concentration in discharge (2mg/l)
C = mean background concentration in receiving water u/s of discharge (0.1mg/l – MCC 2012 data)
f = discharge volume 54,000l/d

1m^3/s = 86,400,000 l/d
Therefore:

T = [(2,678,400 x 0.1) + (54,000 x 2.0)] / [2,678,400 + 54,000]

T = 0.14mg/l

Summary Result - BOD

BOD	95-Percentile Flow
Assimilative Capacity of River	6.7kg/day
Total Amount Discharged	0.108kg/day
% of Assimilative Capacity Absorbed	1.61%
Existing Average Background Upstream	0.1mg/l – MCC 2012 data
Resultants Conc. in River	**0.14mg/l**
Standard EQS – S.W. Regs 2009	2.6mg/l (Good Status)

Headroom (mg/l) = Cmax –C

Cmax = maximum permissible concentration (EQS) (mg/l)
C = background upstream concentration (mg/l)

Headroom = 2.6 – 0.1 = **2.5mg/l**
Percentage Headroom utilised (%) = $\frac{\textbf{(T-C) x 100}}{\textbf{Headroom}}$

T = resultant concentration due to the discharge (mg/l)

Percentage Headroom utilised = $\frac{(0.14 - 0.1) \times 100}{2.5}$ = **1.6%**

The discharge alone is using <25% of the headroom available.

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 is within the EQS of <2.6mg/l for 95%ile flow conditions (Surface water regs 2009) and using less than 25% of the headroom available in the river for BOD assimilation.

Molybdate Reactive Phosphorus (MRP) Assimilative Capacity

95-percentile Flow Conditions
The MRP assimilative capacity of the river under 95-percentile flow conditions is calculated as:

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

where,

AC = Assimilative capacity
$\mathbf{C_{max}}$ = maximum permissible concentration (EQS) in the river (mg/l) (in this case taken as a maximum of 0.075mg/l) (SW Reg's 2009 – good status)
$\mathbf{C_{back}}$ = background upstream concentration (mg/l) (0.014mg/l – MCC 2012 data)
86.4 = constant to correct units to kg/day
F = flow in the river (m^3/s) 95%ile flow (0.031m^3/s or 2,678,400l/d)

Therefore,

AC = (0.075-0.014) x 86.4 x 0.031

AC = 0.16kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 54m³/day, and average MRP of 4.249mg/l (refer table 1, attachment E4), the total amount of MRP discharged to the Toome Stream shall be:

(54,000l/day x 4.249mg/l)/1,000,000 (mg to Kg) = **0.229kg/day**

This is higher than the assimilative capacity of the Toome Stream.

The Mass balance formula is used to calculate the **resulting MRP concentration in the river** resulting from the effluent discharge:

$$T = \frac{FC + fc}{F + f}$$

Where;
T = resultant concentration due to the discharge (mg/l)
F = 95%ile flow of receiving water (m^3/s) (95% flow of 0.031m³/s or 2,678,400l/d)
c = average concentration in discharge (4.249mg/l)
C = mean background concentration in receiving water u/s of discharge (0.014mg/l – MCC 2012 data)
f = discharge volume 54,000l/d

$1m^3/s$ = 86,400,000 l/d
Therefore:

T = [(2,678,400 x 0.014) + (54,000 x 4.249)] / [2,678,400 + 54,000]

T = 0.098mg/l

Summary Result - MRP

MRP	95-Percentile Flow
Assimilative Capacity of River	0.16kg/day
Total Amount Discharged	0.229kg/day
% of Assimilative Capacity Absorbed	Higher than available capacity
Existing Average Background Upstream	0.014mg/l – MCC 2012 data
Resultants Conc. in River	**0.098mg/l**
Standard EQS – S.W. Regs 2009	0.075mg/l (Good Status)

The above calculations indicate the discharge, in terms of MRP concentration is higher than the available assimilative capacity of the Toome stream, the resultant concentration is higher than the EQS of <0.075mg/l for 95%ile flow conditions (Surface water regs 2009). However, these calculations are based on limited monitoring data that is available at present, Monaghan County Council accepts that the MRP levels in the discharge to date are elevated and are commissioning dosing at the Doohamlet WWTP by the end of 2012 to reduce the MRP levels in the effluent and thus in the receiving waters.

Total Ammonia Assimilative Capacity

95-percentile Flow Conditions

The Total Ammonia assimilative capacity of the river under 95-percentile flow conditions is calculated as:

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

where,

AC = Assimilative capacity
$\mathbf{C_{max}}$ = maximum permissible concentration (EQS) in the river (mg/l) (in this case taken as a maximum of 0.14mg/l) (SW Reg's 2009 – good status)
$\mathbf{C_{back}}$ = background upstream concentration (mg/l) (0.015mg/l – MCC data (2012 & 2009)
86.4 = constant to correct units to kg/day
F = flow in the river (m^3/s) 95%ile flow (0.031m^3/s or 2,678,400l/d)

Therefore,

AC = (0.14-0.015) x 86.4 x 0.031

AC = 0.33kg/day

Total Amount Discharge to River:

With an average effluent discharge volume of 54m^3/day, and average total ammonia of 0.74mg/l (refer table 1, attachment E4), the total amount of ammonia discharged to the Toome Stream shall be:

(54,000l/day x 0.74mg/l)/1,000,000 (mg to Kg) = **0.04kg/day**

This constitutes **12.11**% of the assimilative capacity of the Toome Stream.

The Mass balance formula is used to calculate the **resulting total ammonia concentration in the river** resulting from the effluent discharge:

$$T = \frac{FC + fc}{F + f}$$

Where;
T = resultant concentration due to the discharge (mg/l)
F = 95%ile flow of receiving water (m^3/s) (95% flow of 0.031m^3/s or 2,678,400l/d)
c = average concentration in discharge (0.74mg/l)
C = mean background concentration in receiving water u/s of discharge (0.015mg/l – MCC 2012 & 2009 data)

f = discharge volume 54,000l/d

$1m^3/s$ = 86,400,000 l/d
Therefore:

T = [(2,678,400 x 0.015) + (54,000 x 0.74)] / [2,678,400 + 54,000]

T = 0.029mg/l

Summary Result – Total Ammonia

Total Ammonia	**95-Percentile Flow**
Assimilative Capacity of River	0.33kg/day
Total Amount Discharged	0.04kg/day
% of Assimilative Capacity Absorbed	12.11%
Existing Average Background Upstream	0.015mg/l – MCC 2012 & 2009 data
Resultants Conc. in River	**0.029mg/l**
Standard EQS – S.W. Regs 2009	0.140mg/l (Good Status)

Headroom (mg/l) = Cmax –C

Cmax = maximum permissible concentration (EQS) (mg/l)
C = background upstream concentration (mg/l)

Headroom = 0.140 – 0.015 = **0.125mg/l**
Percentage Headroom utilised (%) = $\frac{\text{(T-C) x 100}}{\textit{Headroom}}$

T = resultant concentration due to the discharge (mg/l)

Percentage Headroom utilised = $\frac{(0.029 - 0.015) \times 100}{0.125}$ **= 11.2%**

The discharge alone is using <25% of the headroom available.

The above calculations indicate the discharge, in terms of Total Ammonia concentration, is not impacting on the water quality of the river and the resultant concentration is within the EQS of <0.14mg/l for 95%ile flow conditions (Surface water regs 2009) and using less than 25% of the headroom available in the river for Total Ammonia assimilation.

Conclusion

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 BOD and Total Ammonia and that the EQS are met downstream of the discharge point for the 95-percentile flow conditions for these parameters.
The calculations however, indicate in terms of MRP that the EQS for MRP in the receiving water is being exceeded thus compromising the 'good' status of the Toome stream at the low 95% flow condition. As stated, these calculations are based on limited data available for the Doohamlet WWTP and for the background upstream concentration for these parameters. Not withstanding this, it is Monaghan County Council's intention to commission the dosing facility at the WWTP for the reduction of Phosphorus in the effluent in the coming months which will rectify the situation with regard to the elevated EQS for this particular parameter in the receiving Toome Stream.

- Details of monitoring of the receiving ground water should be supplied via the following web based link: Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed for the primary discharge point. Ground water monitoring locations upgradient and down gradient of the discharge point shall be screened for those substances listed in Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details'. Monitoring of ground water shall be carried out at not less than two points, one upgradient from the discharge location and one downgradient.

  Not applicable.

- For discharges from secondary discharge points Tables 'Monitoring Details', 'Monitoring Test Details', 'Dangerous Substances Monitoring Details' and 'Dangerous Substances Monitoring Test Details' should be completed.

  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 surface or groundwater.

The primary discharge SW1(P) from the Doohamlet Waste Water Plant discharges to the Toome stream which is a tributary of Major Lough Stream, (known locally as the Dromore River) at National Grid Reference 276560E 320690N in the Town land of Doohamlet Co. Monaghan. There are no designations on this stream.

There are no monitoring stations on the Toome stream, the nearest EPA monitoring stations are on the Major Lough Stream, there is a station 0015 located at a bridge North East of Corryloan Lough (upstream from where the Toome stream joins Lough Major Stream) and at the Bridge downstream of Ballintra (Station 0036). The Toome stream's overall status is 'good' with overall

objective to 'protect' it and retain this status, the WWTP is considered 'Not at risk' to the stream, however, it is classified as 'at risk' from unsewered areas and diffuse pollution (WFD website and reports). This status is by extrapolation from the surrounding rivers/water bodies in the area. The Major Lough Stream's status is also 'good'. The Toome stream and Major Lough Stream are in the North West River Basin District, and in the district of the Woodford Water Management Unit (WMU) action plan. There are no WWTP actions/measures outlined for the Doohamlet WWTP under the Woodford WMU. A copy of this WMU is contained within **attachment G2.**

- 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 tested for in 2009 both in the effluent and in the receiving waters 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 drinking water abstraction points exist downstream/down gradient 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.

There are no drinking water abstractions downstream of the discharge point.

- 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 European Site, as defined in Regulation 2(1) of the European Communities (Birds and Natural Habitats) Regulations (S.I. No. 477 of 2011). Undertake a screening for Appropriate Assessment and state whether the discharge(s), whether individually or in combination with other plans or projects is likely to have a significant effect on a European Site(s), in view of best scientific knowledge and in view of the conservation objectives of the site(s). Where it cannot be excluded, on the basis of objective scientific information, following screening for Appropriate Assessment, that the discharge(s), either individually or in combination with other plans or projects, will have a significant effect on a European Site, the applicant shall provide a Natura Impact Statement. Where based on screening it is considered that an Appropriate Assessment is not required, a reasoned response should be provided. This section should also contain details of any modelling of discharges from the agglomeration. Any other relevant information on the receiving environment should be submitted as **Attachment F.1.**

  There is no designated site within the vicinity of the discharge point. There is a protected structure to the South of the discharge point in the village of Doohamlet, namely the Doohamlet All Saints Roman Catholic Church, which is a late 19th century church. There are some monuments listed in the area in the Monaghan County Council archaeological inventory, the

nearest two to the Doohamlet discharge are, MO019-026, which is a ring fort located 1km approx. North West of the discharge point in the town land of Tonyscallon, the other listed monument is MO019-029, another earthworks ring fort site in the town land of Coolmannan located 750m North East of the discharge point. The existing Doohamlet WWTP will not have an adverse impact on the setting and amenity of the monuments described above.

Emissions from the Wastewater Treatment site will not have a significant effect on any designated site. There has been no correspondence with the National Parks and Wildlife Service in connection with the existing or proposed discharge.

Attachment included	Yes	No
		√

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

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

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

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

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

Not Applicable.

SECTION G: PROGRAMMES OF IMPROVEMENTS

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

G.1 Compliance with Council Directives

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

- Dangerous Substances Directive 2006/11/EC,
- Water Framework Directive 2000/60/EC,
- Birds Directive 79/409/EEC,
- Groundwater Directives 80/68/EEC & 2006/118/EC,
- Drinking Water Directives 80/778/EEC,
- Urban Waste Water Treatment Directive 91/271/EEC,
- Habitats Directive 92/43/EEC,
- Environmental Liabilities Directive 2004/35/EC,
- Bathing Water Directive 76/160/EEC, and
- Shellfish Waters Directive (2006/113/EC).

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 the European Communities Environmental Objectives (Surface Waters) Regulations 2009

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 European Communities Environmental Objectives (Surface Waters) Regulations 2009 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 previously identified as the principal sources of pollution under the Phosphorous Regulations (S.I. No. 258 of 1998).

Water Quality Management Plans or Catchment Management Plans

The Woodford Water Management Unit (WMU) for this area under the North West River Basin District is contained in **Attachment G2**. There are no actions outlined for the Doohamlet WWTP in this WMU.

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

As stated previously in this application, it is Monaghan County Council's intention to commission the dosing facility at the WWTP for the reduction of Phosphorus in the effluent in the coming months.

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

Attachment included	Yes	No
	√	

G.3 Impact Mitigation

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

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.

Attachment included	Yes	No
		√

G.4 Storm Water Overflows

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, as amended.

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
		√

SECTION H: DECLARATION

Declaration

I hereby make application for a waste water discharge Certificate of Authorisation/revised Certificate of Authorisation, pursuant to the provisions of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended.

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

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

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

Signed by : _____ **Date :** 27/10/12
(on behalf of the organisation)

Print signature name: MARK JOHNSTON

Position in organisation: S.E.E.

Agglomeration details

Leading Local Authority	Monaghan County Council
Co-Applicants	
Agglomeration	Doohamlet Waste Water Treatment Works
Population Equivalent	600
Level of Treatment	Secondary
Treatment plant address	Doohamlet, Co. Monaghan
Grid Ref (12 digits, 6E, 6N)	276588 / 320721
EPA Reference No:	D0473-01

Contact details

Contact Name:	Mr Mark Johnston
Contact Address:	Water Services County Offices The Glen Monaghan
Contact Number:	047 30500
Contact Fax:	047 82739
Contact Email:	mjohnston@monaghancoco.ie

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:	Doohamlet Waste Water Treatment Plant	
Location:	Doohamlet Co. Monaghan	
Grid Ref (12 digits, 6E, 6N)	276560 / 320690	
Name of Receiving waters:	Toome Stream	
Water Body:	River Water Body	
River Basin District	~~Neagh Bann IRBD~~ NORTH WESTERN RBN	CANNOT CHANGE ONLINE
Designation of Receiving Waters:	Good status	
Flow Rate in Receiving Waters:	0	$m^3.sec^{-1}$ Dry Weather Flow
	0.031	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The Doohamlet WWTP is currently being taken over from a private developer by Monaghan Co. Co. in 2012. 95% flow rate from EPA hydrometric website estimated flows.	

Emission Details:

(i) Volume emitted			
Normal/day	54 m^3	Maximum/day	54 m^3
Maximum rate/hour	2.25 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.000625 m^3/sec		

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

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	24 hr flow proportional	= 7.3	
Temperature	°C	24 hr flow proportional	= 15.6	
Electrical Conductivity (@ 25°C)	µS/cm	24 hr flow proportional	= 773	
Suspended Solids	mg/l	24 hr flow proportional	= 22	1.188
Ammonia (as N)	mg/l	24 hr flow proportional	= 1.15	0.0621
Biochemical Oxygen Demand	mg/l	24 hr flow proportional	< 2	0.108
Chemical Oxygen Demand	mg/l	24 hr flow proportional	= 50	2.7
Total Nitrogen (as N)	mg/l	24 hr flow proportional	= 20.42	1.10268
Nitrite (as N)	mg/l	24 hr flow proportional	= 0.524	0.028296
Nitrate (as N)	mg/l	24 hr flow proportional	= 18.77	1.01358
Total Phosphorous (as P)	mg/l	24 hr flow proportional	= 4.821	0.260334
OrthoPhosphate (as P)	mg/l	24 hr flow proportional	= 4.356	0.235224
Sulphate (SO_4)	mg/l	24 hr flow proportional	= 91.73	4.95342
Phenols (Sum)	µg/l	24 hr flow proportional	< 0.1	0.0054

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	0.054
Simazine	µg/l	24 hr flow proportional	< 0.01	0
Toluene	µg/l	24 hr flow proportional	< 0.28	0.01512
Tributyltin	µg/l	24 hr flow proportional	< 0.02	0
Xylenes	µg/l	24 hr flow proportional	< 1	0.054
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	= 15	0.81
Cyanide	µg/l	24 hr flow proportional	< 5	0.27
Flouride	µg/l	24 hr flow proportional	= 160	8.64
Lead	µg/l	24 hr flow proportional	= 0.4	0.0216
Nickel	µg/l	24 hr flow proportional	= 3.1	0.1674
Zinc	µg/l	24 hr flow proportional	= 26.3	1.4202
Boron	µg/l	24 hr flow proportional	= 261.8	14.1372
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	= 1	0.054
Barium	µg/l	24 hr flow proportional	= 7.7	0.4158

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^3/annum)
SW-1	365	19710

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

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)	Complies with Definition of Storm Water Overflow

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)	276539 / 320750

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09	15/10/11	09/08/12				
pH	= 7.9				Grab	0.01	Method 4500-H+/Electrometry
Temperature	= 13.5				Grab	0	0
Electrical Conductivity (@ 25°C)	= 213				Grab	0.5	Method 2510 B/Electrometry
Suspended Solids	= 3				Grab	3	Method 2540 D/Filtration/Dry in 104C
Ammonia (as N)			< 0.01		Grab	0.06	Method 4500NH3F/Colorimetry
Biochemical Oxygen Demand			= 0.1		Grab	2	Method 5210 B/Electrometry
Chemical Oxygen Demand	= 22				Grab	5	Method 5220 D/Spectrophotometry
Dissolved Oxygen	= 0				Grab	0	DO Meter
Hardness (as $CaCO_3$)		= 85			Grab	0	0
Total Nitrogen (as N)	< 1				Grab	1	Calculation
Nitrite (as N)	= 0.004				Grab	0.003	Method 4500-NO2-B/Colorimetry
Nitrate (as N)	= 0.97				Grab	0.09	Method 4500-NO3-H/Colorimetry
Total Phosphorous (as P)	= 0.044				Grab	0.042	Method 4500-P E/Colorimetry
OrthoPhosphate (as P)			= 0.017		Grab	0.004	Method 4500-P E/Colorimetry
Sulphate (SO_4)	= 18.3				Grab	1.39	Method 4500-SO42-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 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)	276539 / 320750

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09						
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	= 2				Grab	0.2	USEPA Method 3125B ICPMS
Cyanide	< 5				Grab	5	Hach Water Analysis Handbook 2nd Edition
Flouride	= 70				Grab	0.03	Method 4500 F - E Colorimetry
Lead	< 0.38				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	< 4.2				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

Barium	= 5.1				Grab	0.74	USEPA Method 3125B ICPMS

Additional Comments:	Dangerous substances results from 2009

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)	276579 / 320683

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09	15/10/11	09/08/12				
pH	= 7.9				Grab	0.01	Method 4500-H+/Electrometry
Temperature	= 13.4				Grab	0	0
Electrical Conductivity (@ 25°C)	= 212				Grab	0.5	Method 2510 B/Electrometry
Suspended Solids	< 3				Grab	3	Method 2540 D/Filtration/Dry in 104C
Ammonia (as N)			< 0.01		Grab	0.06	Method 4500NH3F/Colorimetry
Biochemical Oxygen Demand			= 0.1		Grab	2	Method 5210 B/Electrometry
Chemical Oxygen Demand	= 21				Grab	5	Method 5220 D/Spectrophotometry
Dissolved Oxygen	= 0				Grab	0	DO Meter
Hardness (as $CaCO_3$)		= 87			Grab	0	0
Total Nitrogen (as N)	< 1				Grab	1	Calculation
Nitrite (as N)	= 0.004				Grab	0.003	Method 4500-NO2-B/Colorimetry
Nitrate (as N)	= 0.94				Grab	0.09	Method 4500-NO3-H/Colorimetry
Total Phosphorous (as P)	= 0.07				Grab	0.042	Method 4500-P E/Colorimetry
OrthoPhosphate (as P)			= 0.014		Grab	0.004	Method 4500-P E/Colorimetry
Sulphate (SO_4)	= 18.6				Grab	1.39	Method 4500-SO42-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 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)	276579 / 320683

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09						
Atrazine	< 0.01				Grab	0.28	USEPA Method 524.2 GCMS
Dichloromethane	< 1				Grab	0.02	Subcontracted Test GCMS
Simazine	< 0.01				Grab	1	USEPA Method 524.2 GCMS
Toluene	< 0.28				Grab	0.96	USEPA Method 3125B ICPMS
Tributyltin	< 0.02				Grab	0.2	USEPA Method 3125B ICPMS
Xylenes	< 1				Grab	0.47	USEPA Method 3125B ICPMS
Arsenic	< 0.96				Grab	4.2	USEPA Method 3125B ICPMS
Chromium	< 0.93				Grab	0.09	USEPA Method 3125B ICPMS
Copper	= 1				Grab	0.2	USEPA Method 3125B ICPMS
Cyanide	< 5				Grab	0.74	USEPA Method 3125B ICPMS
Flouride	= 80				Grab	0.01	USEPA Method 610 HPLC
Lead	< 0.38				Grab	0.01	USEPA Method 610 HPLC
Nickel	= 0.94				Grab	0.93	USEPA Method 3125B ICPMS
Zinc	< 4.6				Grab	0.74	USEPA Method 3125B ICPMS
Boron	< 4.2				Grab	4.6	USEPA Method 3125B ICPMS
Cadmium	< 0.09				Grab	5	Hach Water Analysis Handbook 2nd Edition
Mercury	< 0.2				Grab	0.03	Method 4500 F - E Colorimetry
Selenium	= 1				Grab	0.38	USEPA Method 3125B ICPMS

Barium	= 6.1				Grab	1	USEPA Method 524 GCMS

Additional Comments:	Dangerous substances results from 2009.

Annex 2: Check List For Regulation 16 Compliance

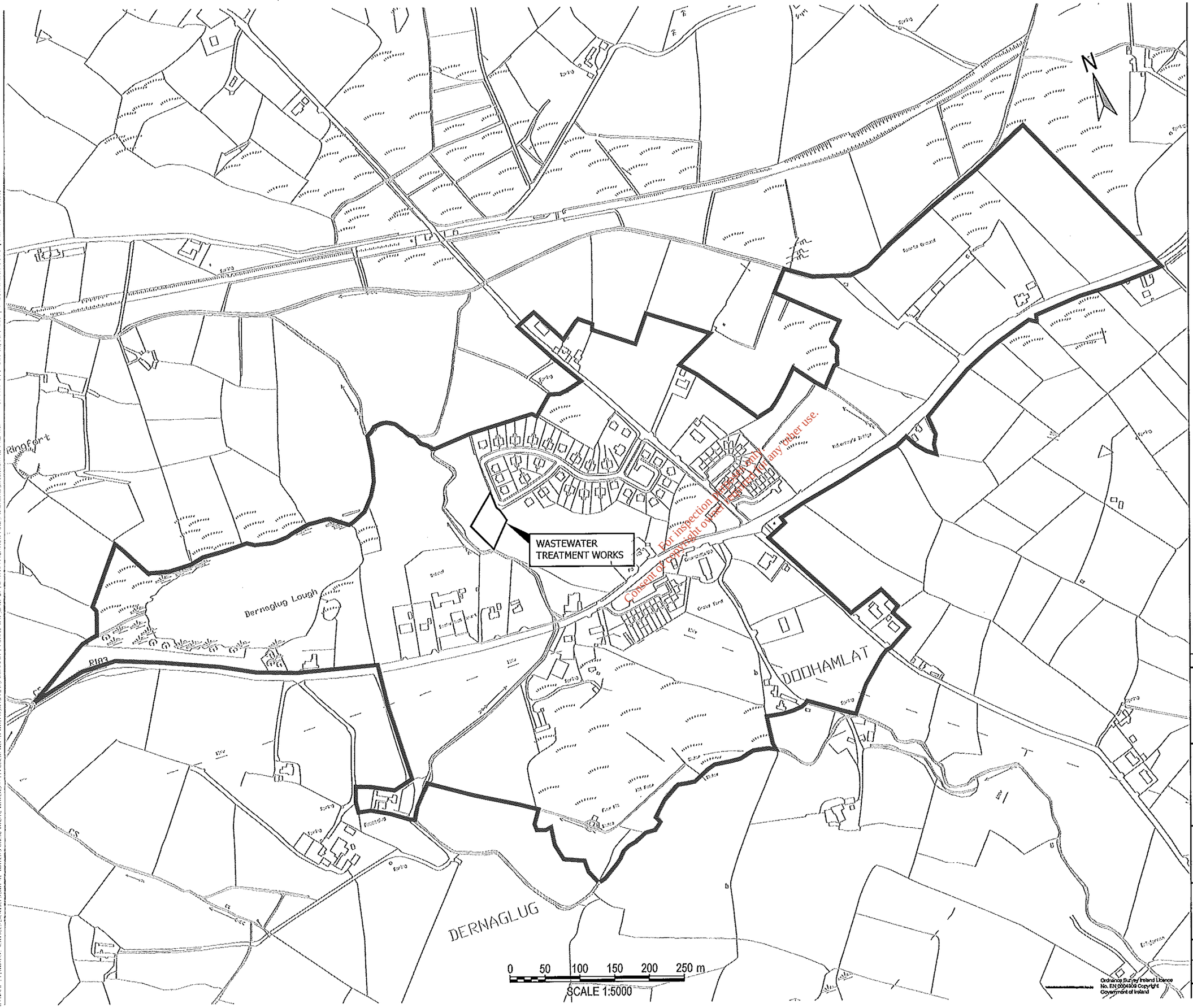
Regulation 16 of the waste water discharge (Authorisation) Regulations 2007 (S.I. No. 684 of 2007) sets out the information which must, in all cases, accompany a discharge licence application. In order to ensure that the application fully complies with the legal requirements of regulation 16 of the 2007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

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

Regulation 16(1) **In the case of an application for a waste water discharge licence, the application shall -**		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant (and, if different, of the operator of any treatment plant concerned) and the address to which correspondence relating to the application should be sent and, if the operator is a body corporate, the address of its registered office or principal office,		No
(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,		No
(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,		No
(d)	state the population equivalent of the agglomeration to which the application relates,		No
(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,		No
(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.		No
(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,		No
(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,		No
(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,		No
(j)	give particulars of the nearest downstream drinking water abstraction point or points to the discharge point or points,		No
(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,		No
(l)	give detail of compliance with relevant monitoring requirements and treatment standards contained in any applicable Council Directives of Regulations,		No
(m)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work.		No
(n)	Any other information as may be stipulated by the Agency.		No
Regulation 16(3) **Without prejudice to Regulation 16 (1) and (2), an application for a licence shall be accompanied by -**		**Attachment Number**	**Checked by Applicant**
(a)	a copy of the notice of intention to make an application given pursuant to Regulation 9,		No
(b)	where appropriate, a copy of the notice given to a relevant water services authority under Regulation 13,		No
(c)	Such other particulars, drawings, maps, reports and supporting documentation as are necessary to identify and describe, as appropriate -		No
(c) (i)	the point or points, including storm water overflows, from which a discharge or discharges take place or are to take place, and		No
(c) (ii)	the point or points at which monitoring and sampling are undertaken or are to be undertaken,		No
(d)	such fee as is appropriate having regard to the provisions of Regulations 38 and 39.		No

Regulation 16(4) An original application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under Regulation 16(3) in hardcopy or in an electronic or other format as specified by the Agency.		Attachment Number	Checked by Applicant
1	An Original Application shall be accompanied by 2 copies of it and of all accompanying documents and particulars as required under regulation 16(3) in hardcopy or in electronic or other format as specified by the agancy.		No
Regulation 16(5) **For the purpose of paragraph (4), all or part of the 2 copies of the said application and associated documents and particulars may, with the agreement of the Agency, be submitted in an electronic or other format specified by the Agency.**		**Attachment Number**	**Checked by Applicant**
1	Signed original.		No
2	2 hardcopies of application provided or 2 CD versions of application (PDF files) provided.		No
3	1 CD of geo-referenced digital files provided.		No
Regulation 17 **Where a treatment plant associated with the relevant waste water works is or has been subject to the European Communities (Environmental Impact Assessment) Regulations 1989 to 2001, in addition to compliance with the requirements of Regulation 16, an application in respect of the relevant discharge shall be accompanied by a copy of an environmental impact statement and approval in accordance with the Act of 2000 in respect of the said development and may be submitted in an electronic or other format specified by the Agency**		**Attachment Number**	**Checked by Applicant**
1	EIA provided if applicable		No
2	2 hardcopies of EIS provided if applicable.		No
3	2 CD versions of EIS, as PDF files, provided.		No
Regulation 24 **In the case of an application for a waste water discharge certificate of authorisation, the application shall –**		**Attachment Number**	**Checked by Applicant**
(a)	give the name, address, telefax number (if any) and telephone number of the applicant and the address to which correspondence relating to the application should be sent and, if the operator of the waste water works is a body corporate, the address of its registered office or principal office	Section B1 of the 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,	Not applicable	Yes
(c)	give the location or postal address (including where appropriate, the name of the townland or townlands) and the National Grid reference of the location of the discharge point or points to which the application relates,	Section B2 of the application	Yes
(d)	state the population equivalent of the agglomeration to which the application relates,	Section A of the application	Yes
(e)	in the case of an application for the review of a certificate, specify the reference number given to the relevant certificate in the register,	Not applicable	Yes
(f)	specify the content and extent of the waste water discharge, the level of treatment provided and the flow and type of discharge,	Section C1 of the application	Yes
(g)	give details of the receiving water body, its protected area status, if any, and details of any sensitive areas or protected areas, or both, in the vicinity of the discharge point or points or likely to be affected by the discharge concerned,	Section F of the application	Yes
(h)	identify monitoring and sampling points and indicate proposed arrangements for the monitoring of discharges and of the likely environmental consequences of any such discharges,	Section E of the application	Yes
(i)	in the case of an existing discharge, specify the sampling data pertaining to the discharge based on the samples taken in the 12 months preceding the making of the application,	Attachment E4	Yes
(j)	describe the existing or proposed measures, including emergency procedures, to prevent unauthorised or unexpected waste water discharges and to minimise the impact on the environment of any such discharges,	Section G of the application	Yes
(k)	give particulars of the location of the nearest downstream drinking water abstraction point or points to the discharge point or points associated with the waste water works,	Not applicable	Yes
(l)	give details of any designation under any Council Directive or Regulations that apply in relation to the receiving waters,	Section G of the applicationand attachment G	Yes
(m)	give details of compliance with any applicable monitoring requirements and treatment standards,	Section E of the application and Attachment E4	Yes
(n)	give details of any work necessary to meet relevant effluent discharge standards and a timeframe and schedule for such work,	Not applicable	Yes
(o)	give any other information as may be stipulated by the Agency, and	Not applicable	Yes
(p)	be accompanied by such fee as is appropriate having regard to the provisions of Regulations 38 and 39.	Section B8(iii) of the application and cover lette	Yes

ATTACHMENT B1



LEGEND:

LICENCE APPLICATION AREA

Rev. A: Title amended to COA. SM M.C.C. 16/08/'12.

REV	DESCRIPTION	BY	CHK	APP	DATE

PH McCARTHY HOUSE
NUTGROVE OFFICE PARK
NUTGROVE AVENUE,
RATHFARNHAM, DUBLIN 14

TEL: +353 (0) 1291 4800
FAX: +353 (0) 1298 9521
e-mail: Info@phmcc.com

Project:

DOOHAMLET
CERTIFICATE OF AUTHORISATION APPLICATION

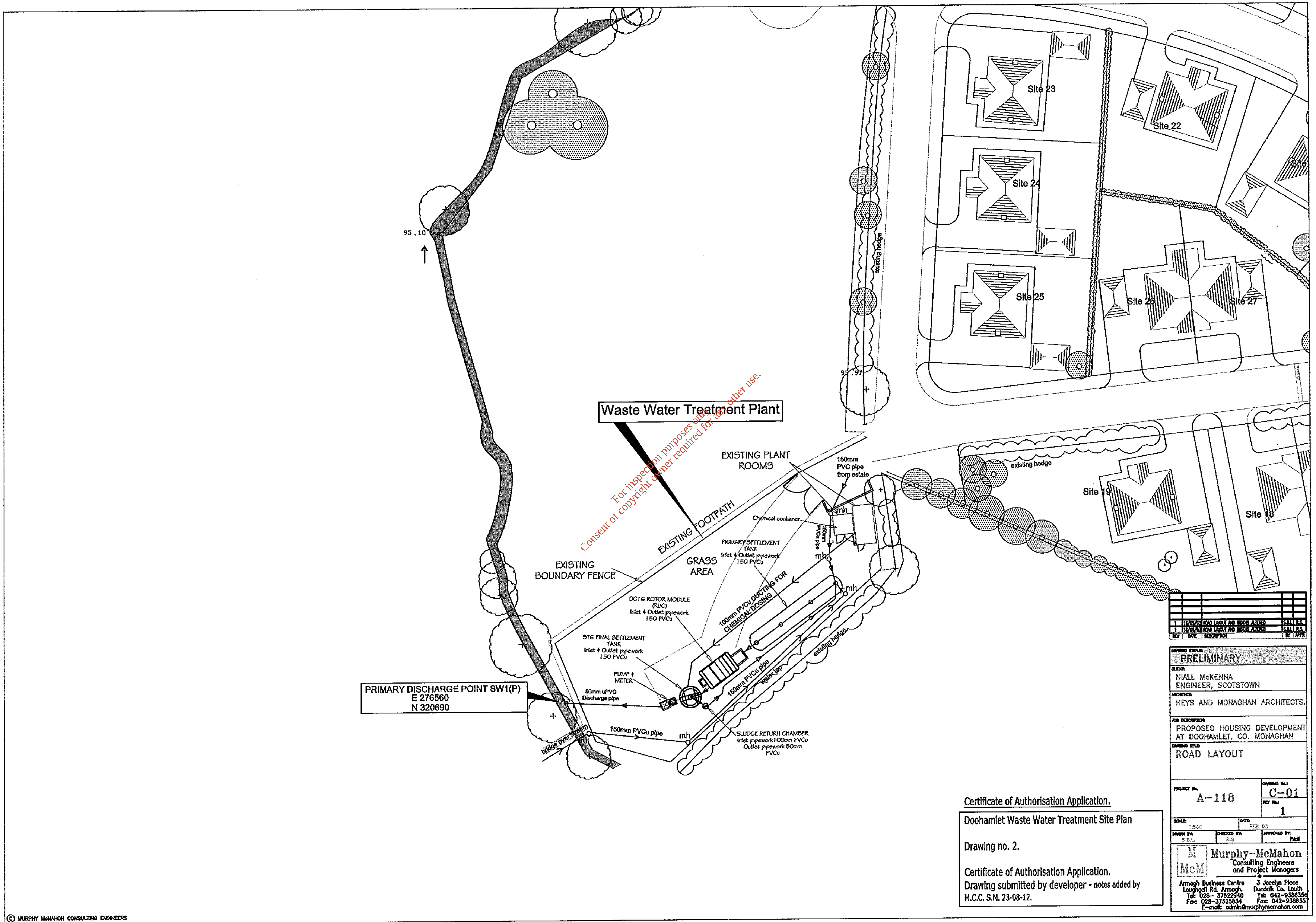
Drawing Title:

SEWAGE TREATMENT WORKS
AGGLOMERATION PLAN

Scale @ A3	Drawn Date	Checked Date	Approved Date
AS SHOWN	HS 15.06.09	CS 15.06.09	TK 15.06.09

Project No.	Office	Type	Drawing No.	Revision
C007400			DRAWING 1	A

ATTACHMENT B2



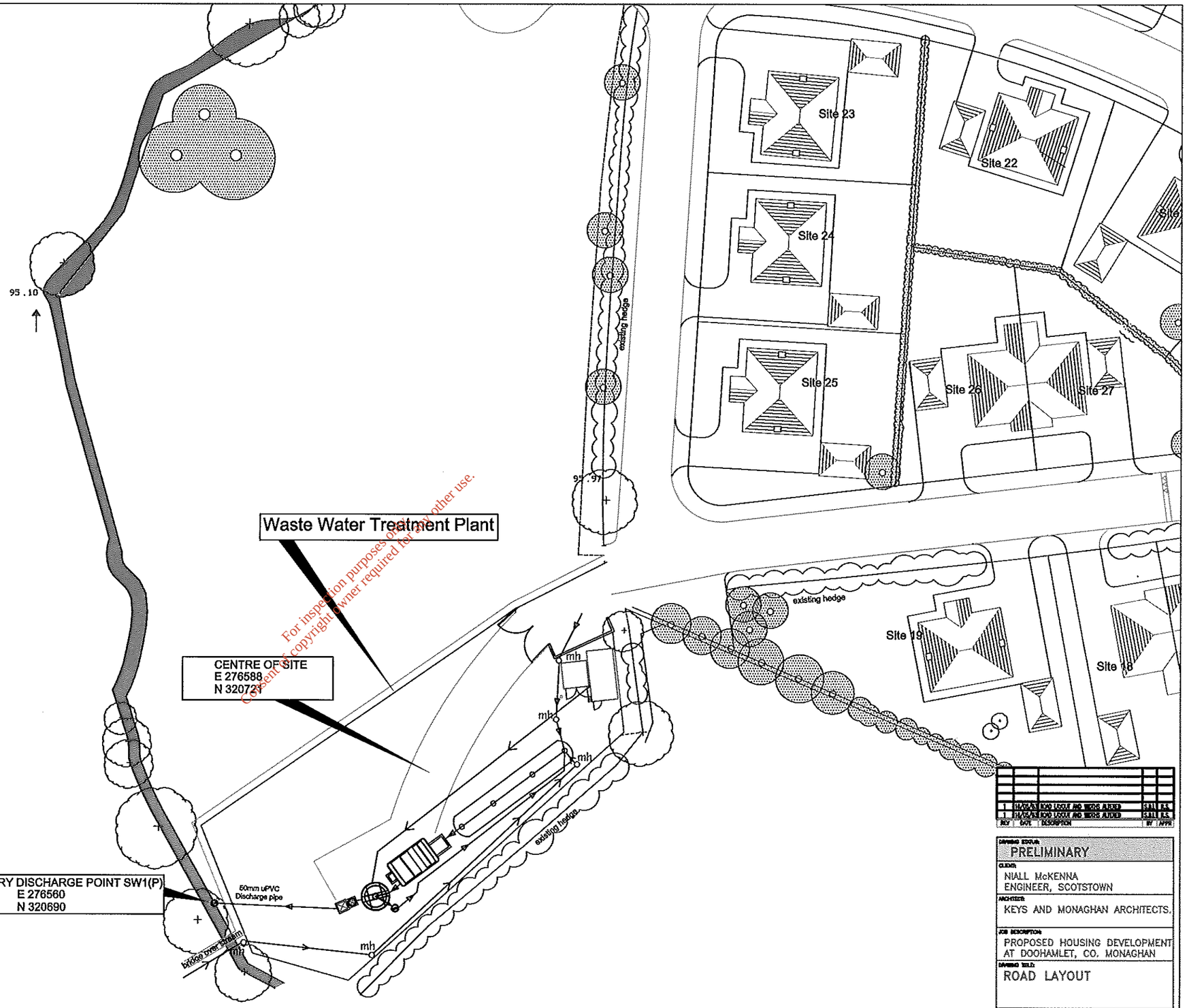
Certificate of Authorisation Application.

Doohamlet Waste Water Treatment Site Plan

Drawing no. 2.

Certificate of Authorisation Application.
Drawing submitted by developer - notes added by M.C.C. S.M. 23-08-12.

ATTACHMENT B3



Certificate of Authorisation Application.

Doohamlet Waste Water Treatment
Location of Primary Discharge Point
Drawing no. 3.

Certificate of Authorisation Application.
Drawing submitted by developer - notes added by M.C.C. S.M. 23-08-12.

REV	DATE	DESCRIPTION	BY	APPR
1	11/03/03	ROAD LOCOUT AND KERBS ADDED	S.B.L.	R.S.
1	11/03/03	ROAD LOCOUT AND KERBS ADDED	S.B.L.	R.S.

DRAWING STATUS: PRELIMINARY

CLIENT: NIALL McKENNA ENGINEER, SCOTSTOWN

ARCHITECT: KEYS AND MONAGHAN ARCHITECTS.

JOB DESCRIPTION: PROPOSED HOUSING DEVELOPMENT AT DOOHAMLET, CO. MONAGHAN

DRAWING TITLE: ROAD LAYOUT

PROJECT No.	DRAWING No.	REV No.
A-118	C-01	1

SCALE	DATE
1:500	FEB 03

DRAWN BY:	CHECKED BY:	APPROVED BY:
S.B.L.	R.S.	Pdnl

Murphy-McMahon
Consulting Engineers and Project Managers
Armagh Business Centre, Loughgall Rd, Armagh. Tel: 028-37522440 Fax: 028-37525834
3 Jocelyn Place, Dundalk Co. Louth. Tel: 042-9386356 Fax: 042-9386357
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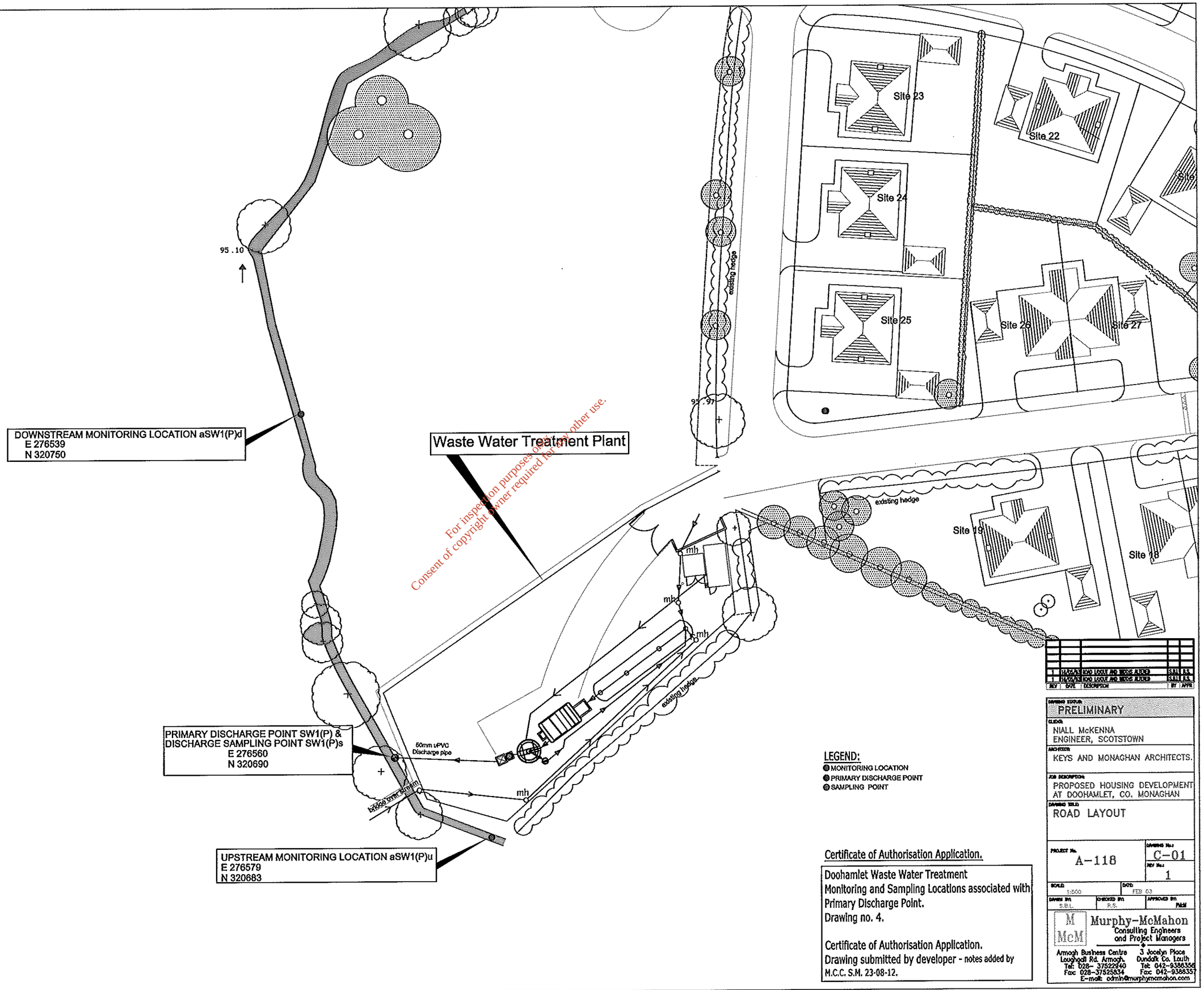

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1. a. The applicant shall carry out all necessary works to widen the existing public road and provide a public footpath as detailed on drawings submitted to the Planning Authority on 22 Aug 2003

   b. The applicant shall provide adequate public lighting along the public foothpath prior to the occupation of the development hereby permitted, to the satisfaction of the Planning Authority

   c. The dwelling houses hereby permitted shall not be occupied until the applicant has obtained and submitted a legal agreement from the owner of the property from the entrance of the proposed housing estate to the junction of the Ballybay/Castleblayney Road as stated in cover letter submitted by Wilkie & Flanagan Solicitors dated 13th August 2003.

   d. All site development and construction works are to be carried out in accordance with the standard in the publication "Recommendations for Site Development Works for Housing Areas" published by the Department of the Environment and Local Government. In addition the proposed development should be constructed in accordance with the requirements of the publication "Monaghan County Council Standards for Private Housing Developments".

   e. The main entrance to the development and entrances to sites 46 and 47 are to form a bellmouth of 5 metres radius with edge of new boundary. Any entrance gates to open inwards only.

   f. Recessed entrances to be provided to sites 46 and 47 of sufficient dimensions to contain a stationary vehicle off the public road.

   g. Sight distance of 100 metres in each direction shall be provided from a point in the main entrances 46 and 47 4 metres from the road edge and 1 metre above ground level. Sight distances shall be measured to the nearside road edge in both directions. Where it is necessary to remove hedges in order to achieve this sight distance, the new boundary shall be located clear of sightlines.

   h. The Area within the visibility splays shall be cleared to provide a level surface no higher than 250mm above the level of the adjoining carriageway and shall be retained and kept clear thereafter. Any pole or column materially effecting visibility shall also be removed. No work shall commence on site until the visibility splays have been provided.

   i. The line of any new fence or wall shall be positioned behind the visibility splays. All existing planting must be kept trimmed behind visibility splays.

   j. The finished access level at the recessed entrances shall be the same as the road level opposite the entrances.

   k. Any new boundary or entrance work shall be located not less than 3 metres from the road edge with level margin.

   l. Gradient in driveways from entrances shall be not greater than 1:20 for the first 5 metres from road edge and 1:10 thereafter.

   m. Access driveways from entrances to be not greater than 1:20 for the first 5 metres from road edge and 1:10 thereafter.

n. French drain consisting of 300mm diameter concrete pipes and backfilled to ground level with suitable granular filter material shall be placed along road edge. Drain shall discharge to the nearest watercourse. Suitable gullies shall be placed at start, end, and intersection of other drains and at not greater than 40 metres intervals. (Separate application shall be made to Monaghan County Council if this requires a road crossing to be carried out).

o. **Applicant to install Cattlegrid**/ACO Drain/Gullies at proposed entrances constructed on such a manner as to prevent water from the entrances flowing onto the public road. Similarly measures must be taken to prevent road surface water from flowing onto the entrances. The discharge from the above to be piped to drainage pipeline. **Cattlegrid is preferable, as there is a degree of certainty when installed no surface water will leave entrance onto public road. ACO drains can become blocked easily and cease to function properly.**

p. The discharge of surface water from the public road onto the site through surface drainage and road subsoil drainage shall remain unimpeded.

q. Provision shall be made within the site for surface water drainage and no surface water shall be allowed flow onto the public roadway.

r. No development exempt or otherwise shall be erected over the public sewer, drain or watermain.

s. All site works required to fulfil the minimum sight distance and drainage requirements above shall be carried out prior to the commencement of any building works.

t. Before any work is commenced on this development a security, by way of a cash deposit, in the sum of €650.00 index linked, shall be given to the Planning Authority by the developer. To ensure the satisfactory completion of all surface water drainage within and abutting the site area to prevent runoff of surface water onto the public roadway.

2. Before the development is commenced the developer shall pay to Monaghan County Council a contribution of € 29,845.00 updated in accordance with the Consumer Price Index from the date of grant of permission to the value pertaining at the time of payment, towards the expenditure that was incurred by the local authority or is proposed to be incurred by the local authority in respect of works that facilitate the proposed development, specifically the provision of public lighting and footpaths. The method of payment of this contribution to be agreed with the Planning Authority prior to the commencement of any work on this development.

The payment of the said contribution shall be subject to the following:-

i) Where the proposed works are, within a period of 7 years from the date of payment of the full contribution or final instalment payment thereof, not commenced the return of the contribution or the Instalments thereof, paid during that period.

ii) Where the proposed works are within a period of 7 years from the date of payment of the full contribution or final instalment payment thereof, carried out in part only, or in such a manner as to facilitate the proposed development to a lesser extent, the return of a Proportionate part of the contribution or the instalments thereof paid during that period.

iii) Payment of interest at prevailing interest rate payable by the Urban Council on the contribution or any instalments thereof that have been paid, so as long as and in so far as it is or they are retained unexpended by the Council.

3. <u>FOUL SEWER AND STORM SEWER:</u>

a. Prior to commencement of any works on site, the applicant/developer is required to liaise with Monaghan County Council Water Services Section in relation to the new proposed treatment plant. Agreement with the Local Authority must be reached prior to any commencement of works on site and written approval must be received concerning these details prior to work starting on site.

b. Design calculations, structural drawings and proposals must be submitted to the Local authority for construction of an attenuation tank/system on the storm water discharge from this development prior to discharge to the open watercourse, capable of retaining the additional storm run off which will be generated from this proposed development. Design of storm run off to be attenuated shall be calculated on the basis of a 1 in 30 year storm return period. These details must be submitted to the Local Authority prior to any commencement of works on site and written approval must be received concerning these details prior to work starting on site.

c. Proposals must be submitted of the proposed Hydro -Brake system clearly showing the flow rates submitted in the additional information (eg. 6 L/sec) will be suitable for the proposed development. The hydro-brake system must be calculated on the basis of a 1 in 30 year storm return period These details must be submitted to the Local Authority prior to any commencement of works on site and written approval must be received concerning these details prior to work starting on site.

d. Applicant/developer is required to take all necessary precautions to prevent any risk of flooding occurring to roadways, adjoining properties/lands, and downstream of the proposed development during all construction works/site works associated with this development/site.

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e. Two approved petrol/oil interceptors to be installed on the storm sewer discharge pipelines,these must be located prior to discharge to open watercourse. These petrol/oil interceptors must be capable of handling the flows equivalent to, or greater than, the maximum storm run off possible from this proposed development. Structural drawings, technical details and specifications must be submitted to the Local Authority for approval, prior to commencement of any works on site.

f. All discharge of surface water from roads, yards or roofs from the proposed development, to be collected into a separate storm water collection system and discharged to the proposed open watercourse at edge of site.

g. The size of foul sewer connections to be 100mm diameter minimum and pipeline to be laid so as to have a minimum gradient of 1 in 30 at all points. Maximum gradient shall not exceed 1 in 150.

h. All manholes to be constructed as per specification and details as set out in section 3 of D.O.E. publication "recommendations for site development works for housing areas" dated November 1998. Manholes shall be fitted with I.S./B.S. approved heavy-duty manhole covers in the case of roadways and footpaths and medium duty lockable covers in the case of gardens and open spaces. All manholes to be watertight and shall be scudded and plastered internally. If circular manholes are to be used applicant is to provide a minimum of 150mm depth of structural concrete surround to manhole rings all to Local Authority approval. The maximum depth of all proposed manholes shall be no more than 2.5m.

i. New storm and foul sewers shall be laid in accordance with B.S. 8005 (guide to construction of new sewers) all to Local Authority approval. All sewers to be laid with a minimum of 150mm depth of pea gravel bedding and surround material. Well-compacted granular material conforming to clause 804 to be provided over pipeline bedding and surround material to finished ground level. Where depth of cover to crown of pipe is less than, 1.0m concrete surround to be provided all to Local Authority approval.

j. All new foul and storm sewers to be satisfactorily tested in accordance with manufactures specification requirements and as detailed in relevant I.S/B.S.

k. Domestic foul and water drainage from culinary and sanitary appliances only, to be connected to proposed foul sewer system.

l. All sanitary facilities shall be completed in compliance with the 1997 building regulations technical guidance document part H.

m. The size of foul sewer connections to be 100mm diameter minimum and pipeline to be laid so as to have a minimum gradient of 1 in 60 at all points. Maximum gradient shall not exceed 1 in 150. Individual connections shall be provided to each site and shall be made during the lying of the sewer using oblique 45 deg. branches (90 deg are not to be used).

n. All toilets, wash hand basins, etc. to be connected to the proposed foul sewer system.

o. Detailed accurate 'As Constructed drawings' in Auto-cad format to an approved scale of all main storm sewer and foul sewer pipelines and connections to be provided including longitudinal sections of main sewer lines showing clearly pipeline size, ground level, invert level, location of manholes, pipe gradients. These drawings to be completed within 3 months of substantial completion of the development and certified copies shall be retained for inspection by the Local Authority on request.

p. The Applicant/Developer shall carry out a CCTV survey of all main storm sewers and foul sewers pipelines, associated with this development, on substantial completion of the proposed works and shall retain certified copies of reports on same for inspection by the Local Authority on request.

q. The Local Authority at all times must be granted right of access to all foul pipelines, storm pipelines and manholes within the proposed development.

WATER MAINS:

a. All requirements in relation to water supply, as detailed in previous planning application submitted, Reference Number: **01/172** for this proposed development to be completed, except as may be required to comply with the following conditions.

b. A letter of agreement from Doomhamlat GWSS, agreeing to the watermain connection must be submitted to the Local Authority, prior to commencement of any works on site.

c. Water connection to each proposed individual dwelling must be provided with a Talbot Matrix Meter Box system and all to manufactures specification. The Talbot Matrix Meter Box system, must be located in a public area easily accessible to Local Authority Official. Minimum cover to service line to be 600mm at all points.

d. The watermain within the proposed development must looped and a Talbot Matrix Meter Box system be installed after the connection to the GWSS watermain and prior to the looping of the watermain within the proposed development. The meter will be located in a public area easily accessible to a Local Authority Official. Minimum cover to service line to be 600mm at all points.

e. A road opening license to be submitted to the Local Authority for approval before any work proceeds on this project.

f. Design, installation, testing and maintenance of services supplying water for domestic and commercial use within buildings and their curtilages to be carried out in strict compliance with BS 6700.

g. All new watermains to be satisfactorily tested in accordance with manufactures specification requirements and as detailed in relevant I.S/B.S.

h. The applicant/developer shall liaise with the Fire Chief Officers, in relation to his requirements with regard to the provision of an adequate water supply, for fire cover purposes to this proposed development.

i. Detailed accurate 'As Constructed drawings' in Auto-cad format to an approved scale of all main watermains and connections to be provided including longitudinal sections of watermain pipelines showing clearly pipeline size, ground level, invert level, and pipe gradients. These drawings to be completed within 3 months of substantial completion of the development and certified copies shall be retained for inspection by the Local Authority on request.

j. The Local Authority & GWSS at all times must be granted right of access to all water pipelines, valves and meters within the proposed development.

4. No development shall take place on site until the applicant provides the following details, legal documents and agreements to the satisfaction of the Planning Authority.

a. Details of the owner and management entity of the all components of the waste water treatment collection and disposal system.

b. Details of proposed licensee for the wastewater treatment facility.

c. Details of proposed financial arrangements and contracts for operation and maintenance of the wastewater treatment facility. (A Design, Build and Operate or similar contract may be considered).

5. The development shall be carried out in such a manner so as to minimise the discharge of silt/soils to receiving stream (Applicant shall liase with the Northern Regional Fisheries Board, Station Road, Ballyshannon, Co. Donegal, prior to the commencement of any works on site)

6. Prior to the commencement of development a letter of consent from Doohamlet Group Water Scheme shall be submitted to the Planning Authority confirming that the scheme is in a position to supply water to the proposed development

7. Before any work is commenced on this development, a security by way of an approved Insurance Bond, letter of guarantee issued by a body approved by the Planning Authority for the purpose, in respect of the proposed development or a cash deposit in the sum of € 100,000.00 index linked, to be given to the Planning Authority by the developer to ensure satisfactory completion of all roads, footpaths, services and open spaces in the development in accordance with the lodged plans.

8. Prior to the release of the Bond as required under (5) above, the developer shall agree details relating to the private management of the housing development specifically in relation to ongoing maintenance of the roads, services and open spaces prior to the taking in charge of the development by the local authority.

9. a. Only those portions of existing hedgerows, including the roadside hedgerow, which must be removed or uprooted to facilitate the construction of roads and structures and to provide adequate sight distances to be removed (or as otherwise agreed in writing with the Planning Authority). All other trees and hedgerows within and bounding this site to be permanently retained in this development, to be reinforced with additional planting and to be protected from damage at all times, particularly during building operations.

   b. Care to be taken to ensure that root systems of existing trees are not damaged during site development or construction work. No earth or hardcore to be heaped or mounded in the vicinity of tree trunks and hedgerows. No trenches, embankments or pipes to be sited within 5m of the trunk of the trees to be retained.

10. a. Within one month of the grant of planning permission the applicant shall submit a comprehensive landscape plan for entire site area, to include:

   i Details of all screen and boundary walls/fences, screen and boundary planting, and planting along access roadway.
   ii. Detailed proposals for all open space areas
   iii. Species, variety, number and location of trees and shrubs to be retained.
   iv. Species, variety, number and location of trees and shrubs to be planted.

   b. Planting to be of species native to the area. All planting to be carried out in the first planting season following receipt of written approval of the landscape scheme from the Planning Authority and commencement of building operations, and permanently retained thereafter. Any plant which fails in the first planting season to be replaced.

11. a. Within one month of the grant of permission the applicant shall submit details of a suitably located play area within the development together with play equipment / structures to the satisfaction of the Planning Authority.

   b. The play area and equipment / structures shall be constructed in accordance with these details prior to the occupation of any dwelling within the development hereby permitted (or as shall be otherwise agreed in writing with the Planning Authority)

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12. The developer is to provide a suitable screened site for use by residents and/or local authority for a "Bring-Bank". Details of same to be submitted to Monaghan County Council prior to the commencement of the development.

13. a. Adequate public lighting to be provided throughout the development. Details of location and design of proposed lighting standards to be submitted to and agreed with the Planning Authority prior to the commencement of any work on this development.
    b. A duct of minimum 100 mm diameter to be provided along footpath in front of proposed dwelling houses to allow for future broad band connections

14. a. All services, E.S.B., Eircom and Piped TV shall be placed underground.
    b. A duct of minimum 100 mm diameter to be provided along footpath in front of proposed dwelling houses to allow for future broad band connections

15. Prior to the commencement of development, proposals for an estate/street name, house numbering scheme and associated signage shall be submitted to the Planning Authority for agreement.

16. All roads, footpaths, public lighting and underground services in respect of phases(s) shall be completed prior to the occupation of the first dwelling house in phase(s). No dwelling house shall be occupied until such time as water and sewerage facilities are provided.

17. a. Details of colour and texture of proposed external wall finish to be submitted to and agreed in writing by the Planning Authority prior to the commencement of any work on this development.
    b. Roof tiles/slates and ridge tiles to be blue black in colour.

18. No site to be sold or otherwise disposed of until such time as roads, services, drainage, lighting and planting in the proposed development has been completed to the satisfaction of the Planning Authority.

19. a. All existing rights of way to be retained and protected in the proposed development.
    b. All public and private property to be adequately protected at all times during construction works.

20. Subject to the above the development to be carried out in strict conformity with the lodged plans and specifications.

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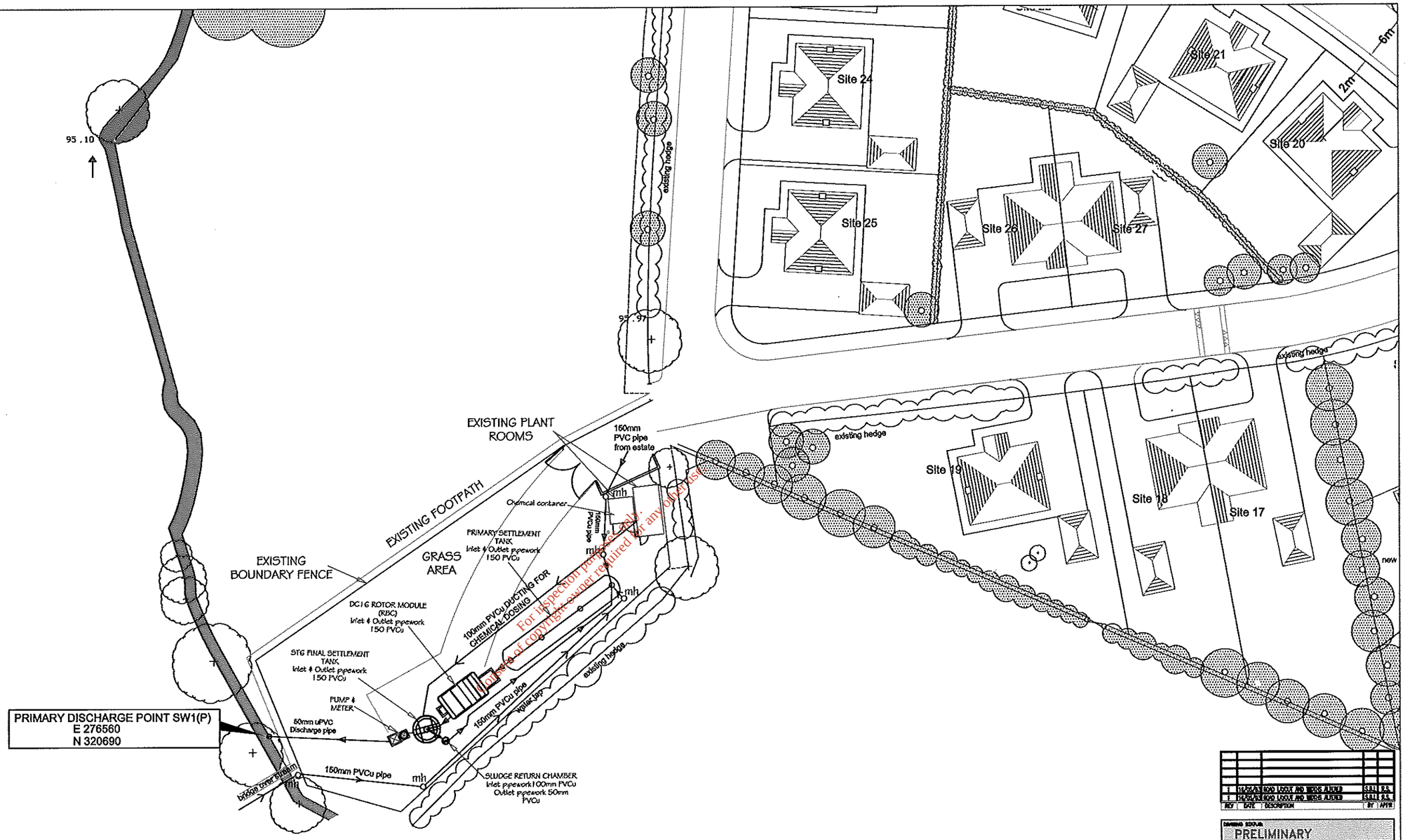
REASONS FOR THE IMPOSITION OF THE ABOVE CONDITIONS ARE:

1. To secure a satisfactory standard of development and prevent the creation of a traffic hazard
2. It is considered that the developer should contribute towards the expenditure incurred or to be incurred by the Council in respect of works, which will facilitate the proposed development.
3. In the interest of proper planning and sustainable development
4. To secure a satisfactory standard of development and prevent the creation of a health hazard
5. To secure a satisfactory standard of development and prevent the creation of a health hazard
6. To ensure a satisfactory standard of development
7. To ensure the proper planning and development of the area
8. To secure a satisfactory standard of development and to protect the amenity of the area
9. To protect the amenity of the area.
10. To protect the amenity of the area and secure a satisfactory standard of development
11. To ensure a satisfactory form of development
12. To secure a satisfactory standard of development and prevent the creation of a health hazard

13 To secure a satisfactory standard of development

14. To secure a satisfactory standard of development and to protect the visual amenities of the area
15. In the interest of orderly development and to assist residents and the postal authorities
16. In the interest of proper planning and orderly development and the area
17. To protect the amenity of the area.
18. To secure the proper planning and development of the area
19. In the interest of orderly development.

ATTACHMENT C1



REV	DATE	DESCRIPTION	BY	APP'D
1		ROADS ROAD LOCK AND LEVELS ADDED	S.B.L.	R.S.
1		ROADS ROAD LOCK AND LEVELS ADDED	S.B.L.	R.S.

DRAWING STATUS: PRELIMINARY

CLIENT: NIALL McKENNA ENGINEER, SCOTSTOWN

ARCHITECT: KEYS AND MONAGHAN ARCHITECTS.

JOB DESCRIPTION: PROPOSED HOUSING DEVELOPMENT AT DOOHAMLET, CO. MONAGHAN

DRAWING TITLE: ROAD LAYOUT

PROJECT No. A-118

DRAWING No. C-01

REV No. 1

SCALE: 1:500

DATE: FEB 03

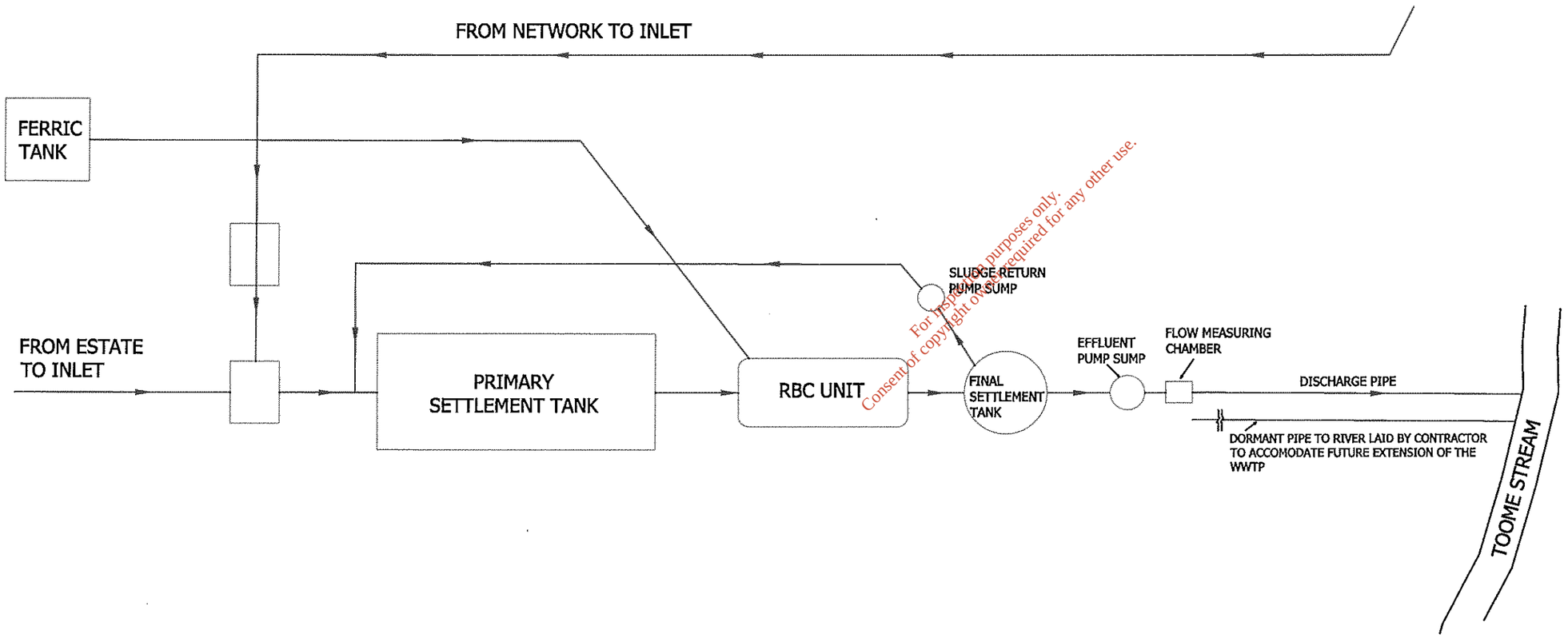
DRAWN BY: S.B.L. CHECKED BY: R.S. APPROVED BY: PMM

Certificate of Authorisation Application.

Doohamlet Waste Water Treatment
General arrangement of treatment plant
Drawing no. 5

Certificate of Authorisation Application.
Drawing submitted by developer - notes added by M.C.C. S.M. 23-08-12.

Murphy-McMahon
Consulting Engineers and Project Managers
Armagh Business Centre, Loughgall Rd. Armagh. Tel: 028- 37522840 Fax 028-37525834
3 Jocelyn Place Dundalk Co. Louth Tel: 042-9338355 Fax 042-9356357
E-mail: admin@murphymcmahon.com



Drawing Title

Doohamlet WWTP
Certificate of Authorisation Application

Water Services Dept.
Monaghan County Council,
The Glen,
Monaghan.
Ph. 047-30500
Fax. 047-82739
e-mail: monaghancoco.ie

Drawn: SM	Checked:
Designed:	Date: 16th Sept 2012
	Scales: Not shown

Drawing no 6: SCHEMATIC FLOW DIAGRAM

ATTACHMENT D1

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:	Doohamlet Waste Water Treatment Plant	
Location:	Doohamlet Co. Monaghan	
Grid Ref (12 digits, 6E, 6N)	276560 / 320690	
Name of Receiving waters:	Toome Stream	
Water Body:	River Water Body	
River Basin District	~~Neagh-Bann IRBD~~ NORTH WESTERN RBD.	CANNOT CHANGE ONLINE.
Designation of Receiving Waters:	Good status	
Flow Rate in Receiving Waters:	0	$m^3.sec^{-1}$ Dry Weather Flow
	0.031	$m^3.sec^{-1}$ 95% Weather Flow
Additional Comments (e.g. commentary on zero flow or other information deemed of value)	The Doohamlet WWTP is currently being taken over from a private developer by Monaghan Co. Co. in 2012. 95% flow rate from EPA hydrometric website estimated flows.	

Emission Details:

(i) Volume emitted			
Normal/day	54 m^3	Maximum/day	54 m^3
Maximum rate/hour	2.25 m^3	Period of emission (avg)	60 min/hr 24 hr/day 365 day/yr
Dry Weather Flow	0.000625 m^3/sec		

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

Discharge Point Code: SW-1

Substance	As discharged			
	Unit of Measurement	Sampling Method	Max Daily Avg.	kg/day
pH	pH	24 hr flow proportional	= 7.3	
Temperature	°C	24 hr flow proportional	= 15.6	
Electrical Conductivity (@ 25°C)	µS/cm	24 hr flow proportional	= 773	
Suspended Solids	mg/l	24 hr flow proportional	= 22	1.188
Ammonia (as N)	mg/l	24 hr flow proportional	= 1.15	0.0621
Biochemical Oxygen Demand	mg/l	24 hr flow proportional	< 2	0.108
Chemical Oxygen Demand	mg/l	24 hr flow proportional	= 50	2.7
Total Nitrogen (as N)	mg/l	24 hr flow proportional	= 20.42	1.10268
Nitrite (as N)	mg/l	24 hr flow proportional	= 0.524	0.028296
Nitrate (as N)	mg/l	24 hr flow proportional	= 18.77	1.01358
Total Phosphorous (as P)	mg/l	24 hr flow proportional	= 4.821	0.260334
OrthoPhosphate (as P)	mg/l	24 hr flow proportional	= 4.356	0.235224
Sulphate (SO_4)	mg/l	24 hr flow proportional	= 91.73	4.95342
Phenols (Sum)	µg/l	24 hr flow proportional	< 0.1	0.0054

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	0.054
Simazine	µg/l	24 hr flow proportional	< 0.01	0
Toluene	µg/l	24 hr flow proportional	< 0.28	0.01512
Tributyltin	µg/l	24 hr flow proportional	< 0.02	0
Xylenes	µg/l	24 hr flow proportional	< 1	0.054
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	= 15	0.81
Cyanide	µg/l	24 hr flow proportional	< 5	0.27
Flouride	µg/l	24 hr flow proportional	= 160	8.64
Lead	µg/l	24 hr flow proportional	= 0.4	0.0216
Nickel	µg/l	24 hr flow proportional	= 3.1	0.1674
Zinc	µg/l	24 hr flow proportional	= 26.3	1.4202
Boron	µg/l	24 hr flow proportional	= 261.8	14.1372
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	= 1	0.054
Barium	µg/l	24 hr flow proportional	= 7.7	0.4158

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 (iv)
Influent Monitoring Data - Available results to date:

Location	Influent	Date of Sampling	Sample Type (C or G)	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l P	Ortho P mg/l P	Total N mg/l N	Ammonia NH4
Doohamlet	Influent	20/04/2009	C	390.0	766	200	11.390	5.062	10.95	49.95
Doohamlet	Influent	15/10/2011	G	173.0	898	522	4.026	nm	<0.12	nm
Doohamlet	Influent	09/08/2012	G	165.0	470	115	4.072	nm	38.08	nm

ATTACHMENT D2

Table D.2:

PT_CD	PT_TYPE	LA_NAME	RWB_TYPE	RWB_NAME	DESIGNATION	EASTING	NORTHING
SW1(P)	Primary	Monaghan Co. Co.	River	Toome Stream (Tributary of Major Lough Stream)	'Good' Status	276560E	320690N

ATTACHMENT E1

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

Identification Code for Discharge point	Frequency of discharge (days/annum)	Quantity of Waste Water Discharged (m^3/annum)
SW-1	365	19710

ATTACHMENT E2

Irish National Accreditation Board

Wilton Park House, Wilton Place, Dublin 2, Ireland. Tel +353 1 6073003 Fax +353 1 6073109 E-mail inab@inab.ie Web www.inab.ie

ACCREDITATION CERTIFICATE

Euro Environmental Services

Unit 35, Boyne Business Park, Drogheda, Co Louth

Testing Laboratory

Registration Number

119T

is accredited by the Irish National Accreditation Board (INAB) to undertake testing as detailed in the Schedule bearing the Registration Number detailed above, in compliance with the International Standard

ISO/IEC 17025:2005 2nd Edition

"General Requirements for the Competence of Testing and Calibration Laboratories"

(This Certificate must only be read in conjunction with the Annexed Schedule of Accreditation)

Date of award of Accreditation: 16:08:2002
Date of last renewal of Accreditation: 14:09:2007
Expiry Date of this certificate of Accreditation: 14:09:2012

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

Manager: Tom Dempsey
Mr Tom Dempsey

Chairperson: Máire C Walsh
Dr Máire Walsh

Issued on 14 September 2007

Organisations are subject to annual surveillance and are re-assessed every five years. The renewal date on this Certificate confirms the latest date of renewal of accreditation. To confirm the validity of this Certificate please contact the Irish National Accreditation Board.

The INAB is a signatory of the European co-operation for Accreditation (EA) Testing Multilateral Agreement (MLA) and the International Laboratory Accreditation Cooperation (ILAC) Mutual Recognition Arrangement.

Irish National Accreditation Board

Wilton Park House
Wilton Place
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http://www.inab.ie

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 119T

Permanent Laboratory: Category A

Schedule of Accreditation

EURO environmental services

Chemical Testing Laboratory

Initial Accreditation Date: 09-10-2000

Postal Address:	Unit 35 Boyne Business Park Drogheda Co Louth
Telephone:	+ 353 41 984 5440
Fax:	+ 353 41 984 6171
Email:	info@euroenv.ie
Web:	www.euroenv.ie
Contact:	Natalie O'Brien
Facilities:	Public Testing Facility

Irish National Accreditation Board

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http://www.inab.ie

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 119T

Permanent Laboratory:
Category A

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

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

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

Testing and Calibration Categories:

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

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

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

Category D: Site calibration and testing that is performed on site by individuals and organisations that do not have a permanent calibration/testing laboratory. Testing may be performed using
(a) portable test equipment
(b) a site laboratory
(c) a mobile laboratory or
(d) equipment from a mobile or site laboratory

Standard Specification or Test Procedure Used:

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

GLOSSARY OF TERMS

Facilities:

Public calibration/testing service: Commercial operations which actively seek work from others.

Conditionally available for public calibration/testing: Established for another primary purpose but, more commonly than not, is available for outside work.

Normally not available for public calibration/testing: Unavailable for public calibration/testing more often than not.

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

EURO environmental services

Chemical Testing Laboratory

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 119T

Permanent Laboratory: Category A

SCOPE OF ACCREDITATION

INAB Classification number Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters .01 Waters for potable and domestic purposes 05 Trade Wastes *Industrial Waters*	PH(4-13) pH units	Documented in-house methods based on Standard Methods for the examination of Water and Wastewater, 20th Edition Method 4500-H+B -- SOP 110
	Conductivity ($5\mu s - 100{,}000\ \mu scm^{-1}$)	Standard Methods for the examination of Water and wastewater, 20th Edition Method 2510B – SOP 112
	BOD (2-6mg/L)	Standard Methods for the examination of Water and wastewater, 20th Edition Method 5210B -- SOP 113
	COD (5-60,000 mg/L)	Standard Methods for the examination of water and wastewater, 20th Edition Method 5220D -- SOP 107
766 Waters .01 Waters for potable and domestic purposes .04 Sewage .05 Trade Wastes *Industrial Waters* .99 Other Waters *Surface Waters* *Groundwaters*	Chloride (20 –10,000mg/L)	Standard Methods for the examination of water and wastewater, 20th Edition Method 4500 – C-E -- SOP 100
	Ammonia (0.2 – 1000 mg/L as N)	Standard Methods for the examination of water and wastewater, 20th Edition Method 4500 NH_3F – SOP 114
	Total Oxidised Nitrogen (TON) (1 -- 8 mg/L as N)	Standard Methods for the examination of water and wastewater, 20th Edition Method 4500 NO_3H – SOP 151

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Chemical Testing Laboratory

ISO 17025 IANAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 119T

Permanent Laboratory: Category A

SCOPE OF ACCREDITATION

INAB Classification number Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters .01 Waters for potable and domestic purposes .04 Sewage .05 Trade Wastes *Industrial Waters* .99 Other Waters *Surface Waters* *Groundwaters*	Orthophosphate (0.1 – 1000 mg/L as P)	Documented in-house methods based on Standard Methods for the examination of water and wastewater, 20th Edition. Method 4500 – P E – SOP 117
	Sulphate (10 – 30 mg/L as SO_4)	Standard Methods for the examination of water and wastewater, 20th Edition. Method 4500-S O_4^2E – SOP 119
	Total Phosphate (0.1 – 0.5 mg/L as P) (0.5 – 4 mg/L as P)	Standard methods for the examination of water and wastewater, 20th Edition. Method 4500-P B – SOP 166
	Na, Ca, K and Mg ICP-MS run (0.5 – 100 ppm)	Standard methods for the examination of water and wastewater, 20th Edition. Method 3120 B – SOP 184
	BTEX (Benzene, Toluene, Ethylbenzene and Xylenes): Benzene (5 – 100µg/L) Ethylbenzene (5 – 100µg/L) Toluene (5 – 100µg/L) o-xylene (5 – 100µg/L) m,p-xylene (10 – 200µg/L)	Based on USEPA methods, 524.2 SOP 179
	THMs (Trihalomethanes): Chlororform Bromochloromethane Dibromoclorometh ane Bromoform (5 - 200µg/L)	Based on USEPA methods, 524.2 SOP 186

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Chemical Testing Laboratory

ISO 17025 INAB ACCREDITED TESTING
DETAILED IN SCOPE REG NO. 119T

Permanent Laboratory:
Category A

SCOPE OF ACCREDITATION

INAB Classification number Materials/products tested	Type of test/properties measured Range of measurement	Standard specifications Equipment/techniques used
766 Waters .01 Waters for potable and domestic purposes .05 Trade Wastes *Industrial Waters* .99 Other Waters *Surface Waters* *Groundwaters*	Hardness (Total) (100 – 400 mg/L $CaCO_3$)	Standard Methods for the Examination of Water and Wastewater, 20th Edition Method 2340 C SOP 111
	Alkalinity (Total) (50 – 10,000 mg/L $CaCO_3$)	Standard Methods for the Examination of Water and Wastewater, 20th Edition Method 2320 B SOP 102
.04 Sewage .05 Trade Wastes *Industrial Waters* .99 Other Waters *Surface Waters* *Groundwaters*	Colour (Apparent) (10 – 500ptCo Units)	Standard Methods for the Examination Of Water and Wastewater, 20th Edition Method 2120 B SOP 108
	Turbidity (0.01 – 1100 NTU)	Standard Methods for the Examination Of Water and Wastewater, 20th Edition Method 2130 A SOP 109

Schedule of Accreditation

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UKAS TESTING

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Accredited to ISO/IEC 17025:2005

Euro Environmental Management Ltd (trading as Fitz Scientific)

Issue No: 029 **Issue date:** 05 October 2011

Unit 35
Boyne Business Park
Drogheda
Co Louth
Ireland

Contact: Mr G Fitzpatrick
Tel: +00 353 41 984 5440
Fax: +00 353 41 941198
E-Mail: info@fitzsci.ie
Website: www.fitzsci.ie

Testing performed by the Organisation at the locations specified below

Locations covered by the organisation and their relevant activities

Laboratory locations:

Location details		Activity	Location code
Address Unit 35 Boyne Business Park Drogheda Co Louth Ireland	**Local contact** Damien O'Reilly Tel: +00 353 41 984 5440 Fax: +00 353 41 984 6171	**Support Functions:** Quality System Quality Audit Administration **Sampling and Testing** Environmental Analysis Stack Emissions Testing	A

Site activities performed away from the locations listed above:

Location details		Activity	Location code
Customer Sites requiring Stack Emissions Testing	**Local contact** Geoff Fitzpatrick Tel: +00 353 41 984 5440 Fax: +00 353 41 984 6171	Stack Emissions Testing	B

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DETAIL OF ACCREDITATION

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Filter papers and rinse solutions	Physical Testing Weighing of Particulate Matter	BS EN 13284-1:2002 (SOP 108)	A
SOILS	Chemical Testing Antimony Arsenic Barium Beryllium Cadmium Chromium Cobalt Copper Lead Manganese Nickel Selenium Silver Strontium Thallium Vanadium Zinc	SOP 224 using ICP-OES	A
	Available lime	SOP 304	A
	Available phosphorus	SOP 301 using Morgans P test and colorimetry (based on standard soil analysis for REPS, Dept of Agriculture, Nov 2004)	A
	Exchangeable magnesium and exchangeable potassium	SOP 303 using Morgans extractant and ICP-OES (based on standard soil analysis for REPS, Dept of Agriculture, Nov 2004)	A
	pH	SOP 300 using meter	A
	Organic matter (by loss on ignition at 500 °C)	SOP 333	A

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS Potable Water, surface water, groundwater, industrial effluent and sewage effluent	Chemical Tests Elements: Antimony Arsenic Barium Beryllium Boron Cadmium Caesium Chromium Cobalt Copper Gallium Lead Lithium Manganese Nickel Rubidium Selenium Strontium Thallium Uranium Zinc	SOP 177 by ICP-MS	A
	Mercury	SOP 178 by ICP-MS	A
Potable water, surface water, groundwater and industrial effluent	Aluminium Iron Vanadium	SOP 177 by ICP-MS	A
Potable water only	Cobalt Silver Tin	SOP 177 by ICP-MS	A
	Total Organic Carbon (TOC)	SOP 316	A
Potable Water, surface water, groundwater, industrial effluent and sewage effluent	Alkalinity	SOP 102 by automated discrete analyser	A
	Ammonia	SOP 114 by automated discrete analyser	A
	Chloride	SOP 100 by automated discrete analyser	A

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd)	Chemical Tests (cont'd)		
Potable Water, surface water, groundwater, industrial effluent and sewage effluent (cont'd)	Colour	SOP 108 by automated discrete analyser	A
	Fluoride	SOP 115 by automated discrete analyser	A
	Nitrite	SOP 118 by automated discrete analyser	A
	Orthophosphate	SOP 117 by automated discrete analyser	A
	Silica	SOP 152 by automated discrete analyser	
	Total Oxidised Nitrogen (TON)	SOP 151 by automated discrete analyser	A
	Total Hardness	SOP 111 by automated discrete analyser	A
	Total phosphate	SOP 166 by automated discrete analyser	A
	Biochemical Oxygen Demand	SOP113	A
	pH	SOP 110	A
	Conductivity	SOP 112	A
	Turbidity	SOP 109	A
Potable waters, groundwater, surface water industrial and sewage effluents	Sulphate	SOP 119 by automated colorimetry	A
	Elements: Calcium Magnesium Potassium Sodium	SOP 184 by ICP-MS	A
Industrial effluent, surface and groundwater	Chemical Oxygen Demand	SOP 107	A
Surface Water and Groundwater	Nitrate	SOP 103 by automated colorimetry	A

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd)	Chemical Tests (cont'd)		
Industrial Effluent	Suspended solids	SOP 106 by gravimetry	A
Industrial effluent, surface and groundwater	Volatile Organic Compounds: Benzene Bromobenzene Bromochloromethane Bromodichloromethane Bromoform *n*-Butylbenzene *sec*-Butylbenzene *tert*-Butylbenzene Carbon tetrachloride Chlorobenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene Dibromochloromethane 1,2-Dibromoethane Dibromomethane 1,2-Dichlorobenzene 1,3-Dichlorobenzene 1,4-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane 1,1-Dichloroethene *cis*-1,2-Dichloroethene *trans*-1,2-Dichloroethene 1,2-Dichloropropane 1,3-Dichloropropane 1,1-Dichloropropene *cis*-1,3-Dichloropropene *trans*-1,3-Dichloropropene Ethylbenzene Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Naphthalene n-Propylbenzene Styrene 1,1,1,2-Tetrachloroethane Tetrachloroethene Toluene 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane	SOP 154 by headspace GC-MS	A

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
WATERS (cont'd) Industrial effluent, surface and groundwater (cont'd)	Chemical Tests (cont'd) Volatile Organic Compounds: (cont'd) 1,1,2-Trichloroethane 1,2,3-Trichloropropane 1,2,4-Trimethylbenzene 1,3,5-Trimethylbenzene *m/p*-Xylene *o*-Xylene	SOP 154 by headspace GC-MS (cont'd)	A
ATMOSPHERIC POLLUTANTS AND EFFLUENTS - STACK GAS SAMPLES			
Impinger solutions (hydrogen peroxide)	Sulphate	In-house procedure based on BS EN 14791:2005 using ion chromatography (IC) (SOP EM 190)	A
Impinger solutions (water)	Chloride	In-house procedure based on BS EN 1911:2010 using ion chromatography (IC) (SOP EM 190)	A
Impinger solutions (sodium hydroxide)	Fluoride	In-house procedure based on BS ISO 15713:2006 using ion chromatography (IC) (SOP EM 190)	A
Testing of Stack emissions to Atmosphere	Sampling and On-Line analysis	National, International and other recognised standards using documented In-House work instructions to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007	
	Carbon monoxide	ASTM D6348-03 (SOP 227- FTIR analyser)	B
	Nitric Oxide	ASTM D6348-03 (SOP 227 - FTIR analyser)	B

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Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Testing of Stack emissions to Atmosphere	Sampling and On-Line analysis (cont'd)	National, International and other recognised standards using documented In-House work instructions to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007	
	Sulphur Dioxide	ASTM D6348-03 (SOP 227 - FTIR analyser)	B
Testing of Stack emissions to Atmosphere	Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007	
	Total Particulate Matter (0 to 50 mg/m³)	BS EN 13284-1:2002 (SOP 101)	B
	Total Particulate Matter (20 to 1000 mg/m³)	BS ISO 9096:2003 (SOP 101)	B
	Hydrogen Chloride	BS EN 1911:2010 (SOP 148)	B
	Hydrogen Fluoride	BS ISO 15713:2006 (SOP 129)	B
	Sulphur Dioxide	BS EN 14791:2005 (SOP 167)	B
	Metals	BS EN 14385:2004 (SOP 113)	B
	Mercury	BS EN 13211:2001 (SOP 152)	B

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Testing performed by the Organisation at the locations specified	

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Testing of Stack emissions to Atmosphere (cont'd)	Sampling with subsequent analysis by an ISO/IEC 17025 Accredited Laboratory (cont'd)	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007 (cont'd)	
	Dioxins and Furans	BS EN 1948-1:2006 (SOP 147)	B
	Polycyclic Aromatic Hydrocarbons (PAHs)	BS ISO 11338-1:2003 (SOP 149)	B
	Speciated VOCs (carbon and other suitable tubes) (Dry Stacks only): Amines and Amides Phenols Cresols Carboxylic Acids Aldehydes	BS EN 13649:2002 (SOP 232)	B
	Formaldehyde (Dry stacks only)	BS EN 13649:2002 (SOP 232)	B
	Sampling and On-Site analysis		
	Water Vapour	BS EN 14790:2005 (SOP 122)	B
	Sampling and On-Line analysis		
	Pressure, temperature and velocity	BS EN 13284-1:2002 (SOP 101)	B
	Carbon Monoxide*	BS EN 15058:2006 (SOP 161 - NDIR analyser)	B
	Oxygen*	BS EN 14789:2005 (SOP 161 and SOP 227 - Validated Zirconium cell analyser)	B

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Testing performed by the Organisation at the locations specified

Materials/Products tested	Type of test/Properties measured/Range of measurement	Standard specifications/ Equipment/Techniques used	Location Code
Testing of Stack emissions to Atmosphere (cont'd)	Sampling and On-Line analysis (cont'd)	National, European, International and Environment Agency specified standards including MIDs and Documented In-House work instructions to meet the requirements of the Environment Agency (MCERTS) Performance Standard and to meet the requirements of DD CEN/TS 15675:2007/ BS EN 15259:2007 (cont'd)	
	Nitrogen Monoxide (NO)*	BS EN 14792:2005 (SOP 161 - Chemiluminescence analyser)	B
	Nitrogen Dioxide (NO_2)*	BS EN 14792:2005 (SOP 161 - Chemiluminescence analyser)	B
	Carbon Monoxide (CO)*	EA TGN M22 (SOP 227 - FTIR)	B
	Nitric Oxide (NO)*	EA TGN M22 (SOP 227 - FTIR)	B
	Sulphur Dioxide (SO_2)*	EA TGN M22 (SOP 227 - FTIR)	B
	Total Gaseous Organic Carbon* (TOC/VOC) (20 - 500 mg/m³)	BS EN 13526:2002 (SOP 156 - FID analyser)	B
	Total Gaseous Organic Carbon* (TOC/VOC) (0 - 20 mg/m³)	BS EN 12619:1999 (SOP 155 -FID analyser)	B

* - The scale range of the analyser used for this test must be that detailed on its current MCERTS certificate or a range validated by the organisation to meet MCERTS requirements.

END

ATTACHMENT E3

Attachment E3

PT_CD	PT_TYPE	MON_TYPE	Easting	Northing	Verified
SW1(P)s	Primary	S	276560	320690	N
aSW1(P)u	Primary	M	276579	320683	N
aSW1(P)d	Primary	M	276539	320750	N

ATTACHMENT E4

TABLE 1 -ATTACHMENT E4
Doohamlet Effluent - Available results to date:

Location	Influent Or Effluent	Date of Sampling	Sample Type (C or G)	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l P	Ortho P mg/l P	Total N mg/l N	Ammonia NH4
Doohamlet	Effluent	20/04/2009	C	<2	50.00	4.00	4.821	4.142	20.42	1.15
Doohamlet	Effluent	15/10/2011	C	<2	35.00	22.00	1.611	nm	8.45	nm
Doohamlet	Effluent	09/08/2012	C	<2	<5	8.00	4.456	4.356	19.78	0.33
Average				2.00	30.00	11.33	2.972	4.249	16.22	0.74

TABLE 2 -ATTACHMENT E4
aSW1(P)u Upstream Monitoring Point - Available results to date:

Location	Upstream	Date of Sampling	Sample Type (C or G)	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l P	Ortho P mg/l P	Total N mg/l N	Ammonia NH4	Hardness CaCO3 mg/l
Doohamlet	Upstream	20/04/2009	G	<2	21	<3	0.070	0.028	<1.0	0.02	
Doohamlet	Upstream	15/10/2011	G	<2	32	9	0.056	nm	0.93	nm	87.00
Doohamlet	Upstream	09/08/2012	G	0.1	nm	nm	nm	0.014	nm	<0.01	

TABLE 3 -ATTACHMENT E4
aSW1(P)d Downstream Monitoring Point - Available results to date:

Location	Downstream	Date of Sampling	Sample Type (C or G)	BOD mg/l	COD mg/l	TSS mg/l	Total P mg/l P	Ortho P mg/l P	Total N mg/l N	Ammonia NH4	Hardness CaCO3 mg/l
Doohamlet	Downstream	20/04/2009	G	<2	22	3	0.044	0.018	<1.00	0.02	
Doohamlet	Downstream	15/10/2011	G	<2	33	13	0.055	nm	0.82	nm	85.00
Doohamlet	Downstream	09/08/2012	G	0.1	nm	nm	nm	0.017	nm	<0.01	

ATTACHMENT F1

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)	276539 / 320750

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09	15/10/11	09/08/12				
pH	= 7.9				Grab	0.01	Method 4500-H+/Electrometry
Temperature	= 13.5				Grab	0	0
Electrical Conductivity (@ 25°C)	= 213				Grab	0.5	Method 2510 B/Electrometry
Suspended Solids	= 3				Grab	3	Method 2540 D/Filtration/Dry in 104C
Ammonia (as N)			< 0.01		Grab	0.06	Method 4500NH3F/Colorimetry
Biochemical Oxygen Demand			= 0.1		Grab	2	Method 5210 B/Electrometry
Chemical Oxygen Demand	= 22				Grab	5	Method 5220 D/Spectrophotometry
Dissolved Oxygen	= 0				Grab	0	DO Meter
Hardness (as $CaCO_3$)		= 85			Grab	0	0
Total Nitrogen (as N)	< 1				Grab	1	Calculation
Nitrite (as N)	= 0.004				Grab	0.003	Method 4500-NO2-B/Colorimetry
Nitrate (as N)	= 0.97				Grab	0.09	Method 4500-NO3-H/Colorimetry
Total Phosphorous (as P)	= 0.044				Grab	0.042	Method 4500-P E/Colorimetry
OrthoPhosphate (as P)			= 0.017		Grab	0.004	Method 4500-P E/Colorimetry
Sulphate (SO_4)	= 18.3				Grab	1.39	Method 4500-SO42-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 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)	276539 / 320750

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09						
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	= 2				Grab	0.2	USEPA Method 3125B ICPMS
Cyanide	< 5				Grab	5	Hach Water Analysis Handbook 2nd Edition
Flouride	= 70				Grab	0.03	Method 4500 F - E Colorimetry
Lead	< 0.38				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	< 4.2				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

Barium	= 5.1				Grab	0.74	USEPA Method 3125B ICPMS

Additional Comments:	Dangerous substances results from 2009

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)	276579 / 320683

Parameter	Results (mg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09	15/10/11	09/08/12				
pH	= 7.9				Grab	0.01	Method 4500-H+/Electrometry
Temperature	= 13.4				Grab	0	0
Electrical Conductivity (@ 25°C)	= 212				Grab	0.5	Method 2510 B/Electrometry
Suspended Solids	< 3				Grab	3	Method 2540 D/Filtration/Dry in 104C
Ammonia (as N)			< 0.01		Grab	0.06	Method 4500NH3F/Colorimetry
Biochemical Oxygen Demand			= 0.1		Grab	2	Method 5210 B/Electrometry
Chemical Oxygen Demand	= 21				Grab	5	Method 5220 D/Spectrophotometry
Dissolved Oxygen	= 0				Grab	0	DO Meter
Hardness (as $CaCO_3$)		= 87			Grab	0	0
Total Nitrogen (as N)	< 1				Grab	1	Calculation
Nitrite (as N)	= 0.004				Grab	0.003	Method 4500-NO2-B/Colorimetry
Nitrate (as N)	= 0.94				Grab	0.09	Method 4500-NO3-H/Colorimetry
Total Phosphorous (as P)	= 0.07				Grab	0.042	Method 4500-P E/Colorimetry
OrthoPhosphate (as P)			= 0.014		Grab	0.004	Method 4500-P E/Colorimetry
Sulphate (SO_4)	= 18.6				Grab	1.39	Method 4500-SO42-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 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)	276579 / 320683

Parameter	Results (µg/l)				Sampling method	Limit of Quantitation	Analysis method / technique
	20/04/09						
Atrazine	< 0.01				Grab	0.28	USEPA Method 524.2 GCMS
Dichloromethane	< 1				Grab	0.02	Subcontracted Test GCMS
Simazine	< 0.01				Grab	1	USEPA Method 524.2 GCMS
Toluene	< 0.28				Grab	0.96	USEPA Method 3125B ICPMS
Tributyltin	< 0.02				Grab	0.2	USEPA Method 3125B ICPMS
Xylenes	< 1				Grab	0.47	USEPA Method 3125B ICPMS
Arsenic	< 0.96				Grab	4.2	USEPA Method 3125B ICPMS
Chromium	< 0.93				Grab	0.09	USEPA Method 3125B ICPMS
Copper	= 1				Grab	0.2	USEPA Method 3125B ICPMS
Cyanide	< 5				Grab	0.74	USEPA Method 3125B ICPMS
Flouride	= 80				Grab	0.01	USEPA Method 610 HPLC
Lead	< 0.38				Grab	0.01	USEPA Method 610 HPLC
Nickel	= 0.94				Grab	0.93	USEPA Method 3125B ICPMS
Zinc	< 4.6				Grab	0.74	USEPA Method 3125B ICPMS
Boron	< 4.2				Grab	4.6	USEPA Method 3125B ICPMS
Cadmium	< 0.09				Grab	5	Hach Water Analysis Handbook 2nd Edition
Mercury	< 0.2				Grab	0.03	Method 4500 F - E Colorimetry
Selenium	= 1				Grab	0.38	USEPA Method 3125B ICPMS

Barium	= 6.1				Grab	1	USEPA Method 524 GCMS

Additional Comments:	Dangerous substances results from 2009.

water matters
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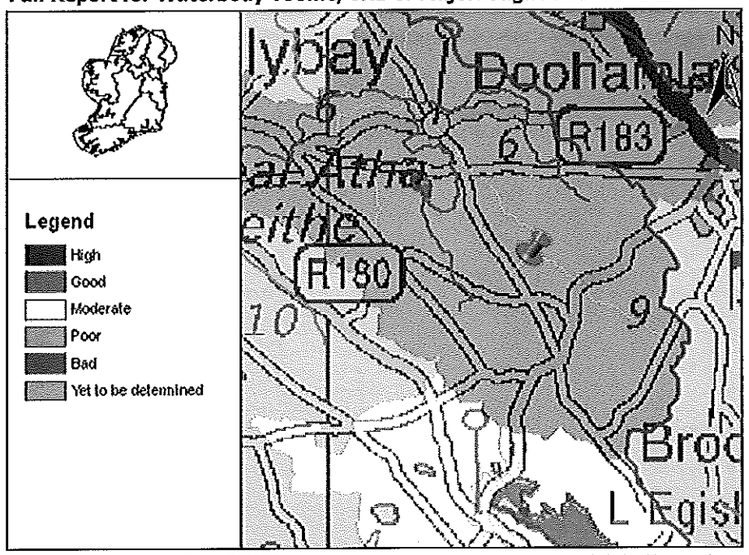
Full Report for Waterbody Toome, Trib of MajorLoughStream and Erne



River Basin Management Plans (RBMPs) have been published for all River Basin Districts in Ireland in accordance with the requirements of the Water Framework Directive. The WaterMaps viewer is an integral part of the River Basin Management Plan and provides access to information at individual waterbody level and at Water Management Unit level for all the River Basin Districts in Ireland.

The following report provides summary plan information about the selected waterbody (indicated by the pin in the map above) relating to its status, risks, objectives, and measures proposed to retain status where this is adequate, or improve it where necessary. Waterbodies can relate to surface waters (these include rivers, lakes, estuaries [transitional waters], and coastal waters), or to groundwaters. Other relevant information not included in this report can be viewed using the WaterMaps viewer, including areas listed in the Register of Protected Areas.

You will find brief notes at the bottom of some of the individual report sheets that will help you in interpreting the information presented. More detailed information can be obtained in relation to all aspects of the RBMPs at www.wfdireland.ie.

Date Reported to Europe:July 2010

Date Report Created 27/09/2012

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Summary Information:

Water Management Unit:	IE_NW_Woodford
WaterBody Category:	River Waterbody
WaterBody Name:	Toome, Trib of MajorLoughStream and Erne
WaterBody Code:	IE_NW_36_1050
Overall Status:	Good
Overall Objective:	Protect
Overall Risk:	1a At Risk
Heavily Modified:	No

north western international river basin district

Report data based upon final RBMP, 2009-2015.

The information provided above is a summary of the principal findings related to the selected waterbody. Further details and explanation of individual elements of the report are outlined in the following pages.

Date Reported to Europe:July 2010

Date Report Created 27/09/2012

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Status Report

Water Management Unit:	IE_NW_Woodford
WaterBody Category:	River Waterbody
WaterBody Name:	Toome, Trib of MajorLoughStream and Erne
WaterBody Code:	IE_NW_36_1050
Overall Status Result:	Good
Heavily Modified:	No

north western international river basin district

	Status Element Description	Result
	Status Information	
Q	Macroinvertebrate status	N/A
PC	General physico-chemical status	N/A
FPQ	Freshwater Pearl Mussel / Macroinvertebrate status	N/A
DIA	Diatoms status	N/A
HYM	Hydromorphology status	N/A
FIS	Fish status	N/A
SP	Specific Pollutants status (SP)	N/A
ES	Overall ecological status	Good
CS	Overall chemical status (PAS)	n/a
EXT	Extrapolated status	YES
MON	Monitored water body	NO
DON	Donor water bodies	NW_36_895

n/a - not assessed

Status
By 'Status' we mean the condition of the water in the waterbody. It is defined by its chemical status and its ecological status, whichever is worse. Waters are ranked in one of 5 status classes: High, Good, Moderate, Poor, Bad. However, not all waterbodies have been monitored, and in such cases the status of a similar nearby waterbody has been used (extrapolated) to assign status. If this has been done the first line of the status report shows the code of the waterbody used to extrapolate.

You can read more about status and how it is measured in our RBMP Document Library at www.wfdireland.ie (Directory 15 Status).

Date Reported to Europe:July 2010

Date Report Created 27/09/2012

water matters

Risk Report

Water Management Unit: IE_NW_Woodford
WaterBody Category: River Waterbody
WaterBody Name: Toome, Trib of MajorLoughStream and Erne
WaterBody Code: IE_NW_36_1050
Overall Risk Result: 1a At Risk
Heavily Modified: No

north western international river basin district

	Risk Test Description		Risk
	Diffuse Risk Sources		
RD1	EPA diffuse model (2008)	1b	Probably At Risk
RD2a	Road Wash - Soluble Copper	2b	Not At Risk
RD2b	Road Wash - Total Zinc	2b	Not At Risk
RD2c	Road Wash - Total Hydrocarbons	2b	Not At Risk
RD3	Railways	2b	Not At Risk
RD4a	Forestry - Acidification (2008)	2b	Not At Risk
RD4b	Forestry - Suspended Solids (2008)	2b	Not At Risk
RD4c	Forestry - Eutrophication (2008)	2a	Probably Not At Risk
RD5	Overall Unsewered (2008)	1a	At Risk
RD5a	Unsewered Areas - Pathogens (2008)	1a	At Risk
RD5b	Unsewered Phosphorus (2008)	1a	At Risk
RD6a	Arable	2b	Not At Risk
RD6b	Sheep Dip	2b	Not At Risk
RD6c	Forestry - Dangerous Substances	2b	Not At Risk
RDO	Diffuse Overall -Worst Case (2008)	1a	At Risk
	Hydrology		
RHY1	Water balance - Abstraction	1b	Probably At Risk
	Morphological Risk Sources		
RM1	Channelisation (2008)	2b	Not At Risk
RM2	Embankments (2008)	2b	Not At Risk
RM3	Impoundments	2b	Not At Risk
RM4	Water Regulation	2b	Not At Risk
RM5	Intensive Landuse	na	N/A
RMO	Morphology Overall - Worst Case (2008)	2b	Not At Risk
	Overall Risk		
RA	Rivers Overall - Worst Case (2008)	1a	At Risk
	Point Risk Sources		
RP1	WWTPs (2008)	2b	Not At Risk
RP2	CSOs	2b	Not At Risk
RP3	IPPCs (2008)	2b	Not At Risk
RP4	Section 4s (2008)	2b	Not At Risk
RP5	WTPs/Mines/Quarries/Landfills	na	N/A
RPO	Overall Risk from Point Sources - Worst Case (2008)	2b	Not At Risk
	Q Value		
Q	EPA Q rating and Margaritifera Assessment	na	N/A
	Q/RDI or Point/Diffuse		
QPD	Q class/EPA Diffuse Model or worst case of Point and Diffuse (2008)	1a	At Risk

Date Reported to Europe:July 2010

Date Report Created 27/09/2012

water matters
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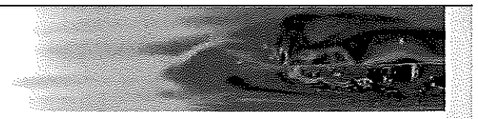


Rivers Direct Impacts

RDI1 Rivers Direct Impacts - Dangerous Substances

Risk

By 'risk' we mean the risk that a waterbody will not achieve good ecological or good chemi 2015. To examine risk the various pressures acting on the waterbody were identified alon on water status. Depending on the extent of the pressure and its potential for impact, and available, the risk to the water body was placed in one of four categories: 1a at risk; 1b pr at risk; 2b not at risk. Note that '2008' after the risk category means that the risk assessme other risks were determined as part of an earlier risk assessment in 2005.

You can read more about risk assessment in our 'WFD Risk Assessment Update' docume library, and other documents at www.wfdireland.ie (Directory 31 Risk Assessments).

Date Repo

Date Re

water matters

Objectives Report

Water Management Unit:	IE_NW_Woodford
WaterBody Category:	River Waterbody
WaterBody Name:	Toome, Trib of MajorLoughStream and Erne
WaterBody Code:	IE_NW_36_1050
Overall Objective:	Protect
Heavily Modified:	No

	Objectives Description	Result
	Extended timescale Information	
E1	Extended timescales due to time requirements to upgrade WWTP discharges	No Status
E2	Extended timescales due to delayed recovery of chemical pollution and chemical status failures	No Status
E3	Extended timescales due to delayed recovery following reduction in agricultural nutrient losses	No Status
E4	Extended timescales due to delayed recovery from physical modifications and physical damage	No Status
E5	Extended timescales due to delayed recovery following implementing forestry acidification measures	No Status
E6	Extended timescales due to physical recovery timescales at mines and contaminated sites	No Status
E7	Extended timescales due to delayed recovery of highly impacted sites	No Status
E8	Extended timescales due to delayed recovery following reduction in agricultural nutrient losses	No Status
E9	Extended timescales due to delayed recovery from nitrogen losses to estuaries	No Status
E10	Extended timescales due to delayed recovery following reduction in agricultural nutrient losses	No Status
E11	Extended timescales due to delayed recovery from physical modifications and physical damage (overgrazing)	No Status
E12	Extended timescales due to delayed recovery from physical modifications and physical damage (channelisation)	No Status
E13	Extended timescales from Northern Ireland Environment Agency	No Status
EOV	Overall extended timescale - combination of all extended timescales fields	No Status
E14	Extended timescales due to the presence of Freshwater Pearl Mussel populations	No Status
EX15	Extended timescales due to highly impacted sites	No Status
	Objectives Information	
OB1	Prevent deterioration objective	No Status
OB2	Restore at least good status objective	No Status
OB3	Reduce chemical pollution objective	No Status
OB4	Protected areas objective	Protect
OB5	Northern Ireland Environment Agency objective	No Status
OBO	Overall objectives	Protect

Extended timescales
Extended timescales have been set for certain waters due to technical, economic, environmental or recovery constraints. Extended timescales are usually of one planning cycle (6 years, to 2021) but in some cases are two planning cycles (to 2027).

Objectives
In general, we are required to ensure that our waters achieve at least good status/potential by 2015, and that their status does not deteriorate. Having identified the status of waters (this is given earlier in this report), the next stage is to set objectives for waters. Objectives consider waters that require protection from deterioration as well as waters that require restoration and the timescales needed for recovery. Four default objectives have been set initially:-

Prevent Deterioration
Restore Good Status
Reduce Chemical Pollution
Achieve Protected Areas Objectives

These objectives have been refined based on the measures available to achieve them, the latter's likely effectiveness, and consideration of cost-effective combinations of measures. Where it is considered necessary extended deadlines have been set for achieving objectives in 2021 or 2027.

Date Reported to Europe:July 2010

Date Report Created 27/09/2012

water matters

Measures Report

Water Management Unit:	IE_NW_Woodford
WaterBody Category:	River Waterbody
WaterBody Name:	Toome, Trib of MajorLoughStream and Erne
WaterBody Code:	IE_NW_36_1050
Heavily Modified:	No

	Measures Description	Applicable
BC	Total number of basic measures which apply to this waterbody	20
BW	Directive - Bathing Waters Directive	No
BIR	Directive - Birds Directive	No
HAB	Directive - Habitats Directive	No
DW	Directive - Drinking Waters Directive	Yes
MAE	Directive - Major Accidents and Emergencies Directive	Yes
EIA	Directive - Environmental Impact Assessment Directive	Yes
SS	Directive - Sewage Sludge Directive	Yes
UWT	Directive - Urban Waste Water Treatment Directive	Yes
PPP	Directive - Plant Protection Products Directive	Yes
NIT	Directive - Nitrates Directive	Yes
IPC	Directive - Integrated Pollution Prevention Control Directive	Yes
CR	Other Stipulated Measure - Cost recovery for water use	Yes
SUS	Other Stipulated Measure - Promotion of efficient and sustainable water use	Yes
DWS	Other Stipulated Measure - Protection of drinking water sources	Yes
ABS	Other Stipulated Measure - Control of abstraction and impoundment	Yes
POI	Other Stipulated Measure - Control of point source discharges	Yes
DIF	Other Stipulated Measure - Control of diffuse source discharges	Yes
PS	Other Stipulated Measure - Control of priority substances	Yes
MOD	Other Stipulated Measure - Controls on physical modifications to surface waters	Yes
OA	Other Stipulated Measure - Controls on other activities impacting on water status	Yes
AP	Other Stipulated Measure - Prevention or reduction of the impact of accidental pollution incidents	Yes
TP1	WSIP - Agglomerations with treatment plants requiring capital works	No
TP2	WSIP - Agglomerations with treatment plants requiring further investigation prior to capital works	No
TP3	WSIP - Agglomerations requiring the implementation of actions identified in Shellfish PRPs	No
TP4	WSIP - Agglomerations with treatment plants requiring improved operational performance	No
TP5	WSIP - Agglomerations requiring investigation of CSOs	No
TP6	WSIP - Agglomerations where exisitng treatment capacity is currently adequate but predicted loadings would result in overloading	No
OTS	On-site waste water treatment systems	Yes
FPM	Freshwater Pearl Mussel sub-basin plan	No
SHE	Shellfish Pollution Reduction Plan	No
IPR	IPPC licences requiring review	No
WPR	Water Pollution Act licences requiring review	No
FOR	Forestry guidelines and regulations	Yes
CH1	Chanelisation measures	No
CH2	Chanelisation investigations	No
OG	Overgrazing measures	No
HQW	Protect high quality waters	No

Measures
Measures are necessary to ensure that we meet the objectives set out in the previous page of this report. Many measures are already provided for in national legislation and must be implemented. Other measures have been recently introduced or are under preparation. A range of additional potential measures are also being considered but require further development. Any agreed additional measures can be introduced through the update of Water Management Unit Action Plans during the implementation process.

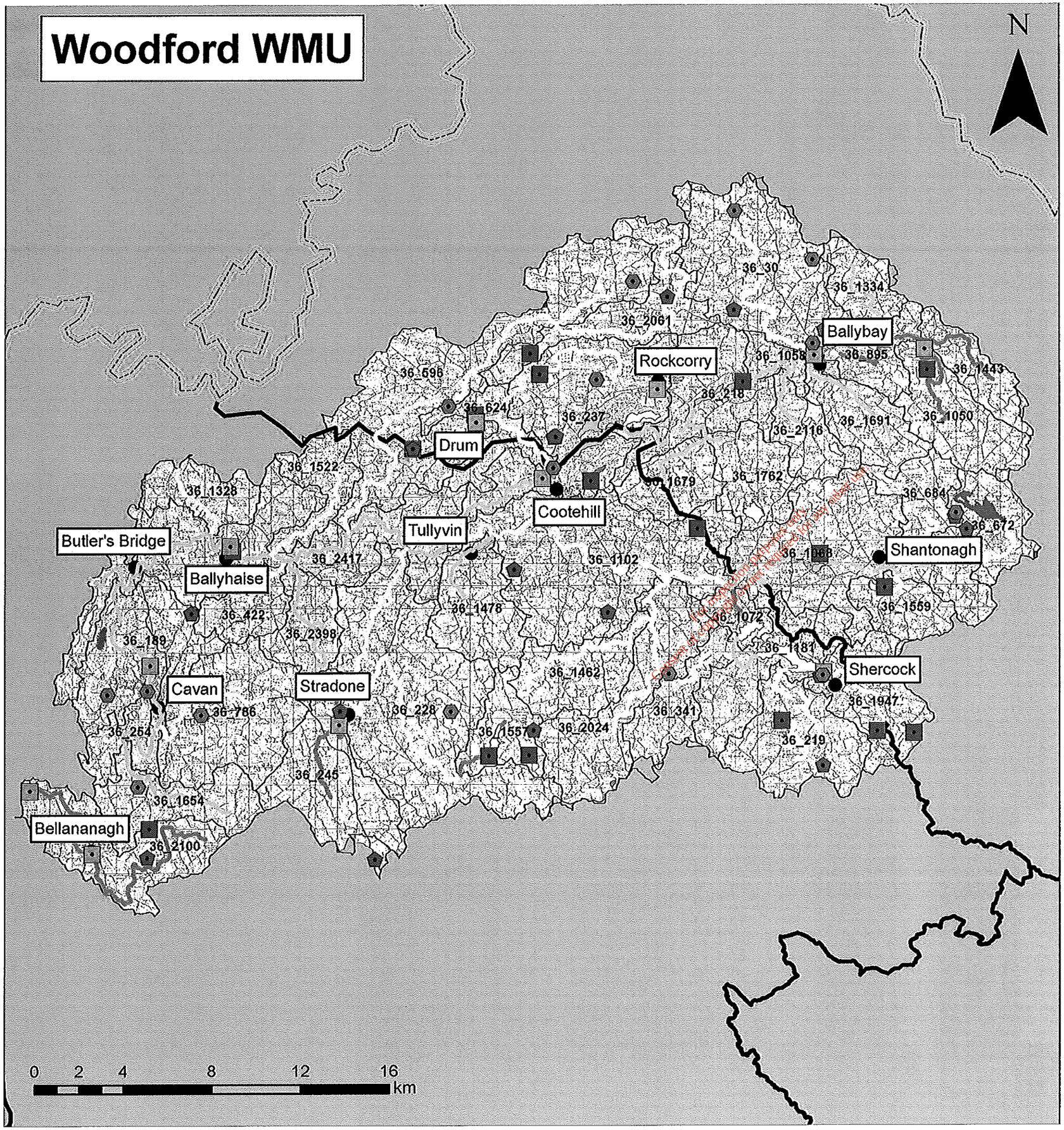
You can read more about Basic Measures in 'River Basin Planning Guidance' and in other documents in our RBMP Document Library at www.wfdireland.ie.

Date Reported to Europe:July 2010

Date Report Created 27/09/2012

ATTACHMENT G2

Woodford Water Management Unit Action Plan



Legend

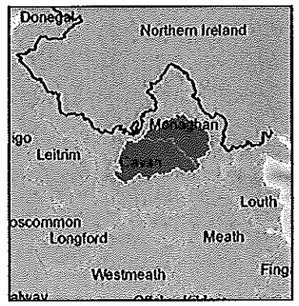
- Towns and Villages
- Wastewater Treatment Plants
- EPA Licensed Facility (IPPC)
- Local Authority Licensed Discharge
- Water Treatment Plants
- NI Boundary

River Status

- High
- Good
- Moderate
- Poor
- Bad

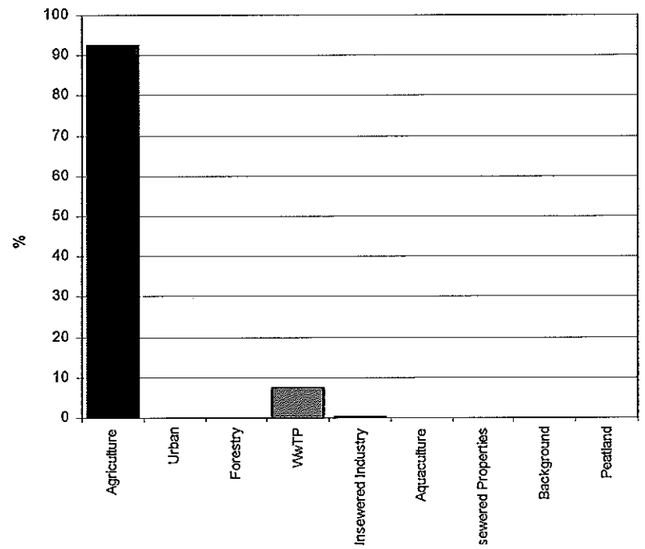
Lake Status

- High
- Good
- Moderate
- Poor
- Bad



Name	Woodford Water Management Unit (WMU)
Area	890 km^2
River Basin District	North West RBD
Main Counties	Monaghan/Cavan
Protected Areas	1 SAC - Lough Oughter and associated loughs 1 SPA - Lough Oughter 18 surface drinking waters

Sectoral Total Phosphorus Source
(This does not imply impact)

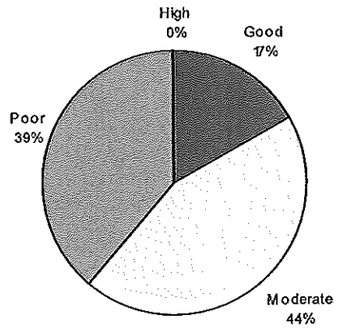


Woodford Water Management Unit Action Plan

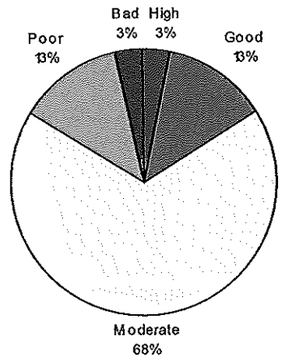
STATUS/IMPACTS	
Overall status	41 River water bodies – 7 good, 18 moderate and 16 at poor status. Overall status is predominantly moderate or poor. Some headwaters are at good or high status. Lakes within the WMU are predominantly at less than good status with only 16% achieving good or high status. 31 lakes within WMU – 1 high, 4 good, 21 moderate, 4 poor and 1 at bad status.
Status elements	Macroinvertebrates (Q score) is the main driver of status in the river water bodies. There are 2 chemical monitoring sites within the WMU both of which pass the relevant environmental standards.
Possible Impacts - EPA Water Quality	Annalee- **NW_36_1947/1072/1102, Status 2009 – Moderate/Good/Moderate**, upper river continued to be adversely affected by eutrophic outflows from Loughs Sillan and Tacker and also by heavy substratum siltation at several locations Avaghlon Lake Stream –**(NW_36_1762, Status 2009 – Poor)** Moderate unsatisfactory pollution of suspected agricultural origin (unsewered village and lake effects may also impact on water body) Bunnoe - **(NW_36_596, Status 2009 – Moderate)** Less than satisfactory, agriculture suspected (some improvements recently, past channalisation may also be a factor) Cavan – **(NW_36_1522, Status 2009 – Moderate)** fencing required to restrict heavy cattle usage. Considerable deterioration below Cavan, heavily silted, excessive algal growth and faunal composition indicative of organic pollution. Dromore – **(NW_36_2417, status 2009 – Poor)** Largely affected by sewage & agriculture on lakes along river's course. Excessive bottom siltation. Ballybay represents a source of diffuse urban pressures. Knappagh – **(NW_36_1068, Status 2009 – Poor)** Heavily silted and affected by lakes upstream of Lacken Bridge. Historical problems with pollution from industry on the lakes, lake outflows also identified as an issue. Laragh – **(NW_36_2417, Status 2009 – Poor)** agriculture resulting in excessive algal growth (slurry) and bank damage. (Cattle trampling).

PRESSURES/RISKS	
Nutrient sources	Over 92% of total phosphorus load is diffuse predominantly agriculture (92.5%), with point source load from WWTPs (7%) and unsewered industries (0.2%)
Point pressures	12 WWTP (Cavan, Ballinagh (Bellanagh), Ballyhaise, Cootehill, Crossdoney, Shercock, Stradone, Butlersbridge – All in Co. Cavan. Rockorry, Ballybay Doohamlet and Drum WWTP – All in Co. Monaghan; 13 Local Authority licenced (Section 4) discharges; 16 EPA licenced discharges (IPPCs) five of which discharge directly to surface waters. The IPPC licences are predominantly intensive agriculture (Poultry) which do not discharge to surface waters. 15 Water Treatment Plants Barraghy Lough, Killynenagh Lough, Annaghierin Lough, Naglare Lough, Lough Cornaseer, Lough Acanon, Lough Coragh, Cornalara Lough, Namachree Lough, Toome/Crinkill Lough, White Lough, Bawn Lough, Drum Lough, Annalee River.
Wastewater Treatment Plants (WWTP) and Industrial Discharges	Cavan - risks relating to assimilative capacity for BOD and nutrients, and unsatisfactory downstream water quality (Q-value <4) within 3km of outfall. Ballinagh - risks associated with insufficient future WWTP capacity, and insufficient assimilative capacity for BOD. Cootehill - risks related to insufficient future WWTP capacity. Rockcorry - risks related to insufficient assimilative capacity for BOD and evidence of impact downstream Ballybay - risks related to insufficient assimilative capacity for BOD and nutrients in receiving water. IPPC, Poultry products - risks associated with insufficient assimilative capacity in receiving water. IPPC Water company - risks relating to insufficient assimilative capacity in receiving water (at 2 individual plants). IPPC Food plant - 2 risks relating to insufficient assimilative capacity in receiving water.
Quarries, Mines & Landfills	1 at risk (NW_36_2417). Local Authority licenced quarry in water body NW_36_2061.
Agriculture	High risk across WMU
On-site systems	There are 10545 septic tanks in this WMU, 6025 are at risk due to their location and hydrogeological conditions. 24 water bodies within the WMU have been assessed to be at risk due to unsuitable hydrogeological conditions and the high density and location of unsewered properties.
Forestry	No water bodies at risk from forestry
Dangerous substances	No water bodies at risk from dangerous substances
Morphology	2 risks identified due to channelisation, inspection proposed (NW_36_254, NW_36_2417)
Abstractions	14 water bodies at risk (NW_36_1462, NW_36_1102, NW_36_1557, NW_36_1947, NW_36_1068, NW_36_218, NW_36_341, NW_36_1181, NW_36_1072, NW_36_1559, NW_36_219, NW_36_2061, NW_36_1050, NW_36_596). 8 lakes at risk – Cornalara, Toome (Crinkill), Killynenagh, Naglare, Annaghierin, Coragh, Baraghy and Namachree Loughs.

River Data



Lake Data



PRESSURES/RISKS	
Other	Some historic sources of pollution Lough Egish, Lough Minor. General land drainage/dredging, construction activities (siltation and other problems), diffuse rural other than agriculture e.g. business/small industry/ commercial institutional etc. Lough Eglish outflow may contribute significantly to downstream water quality.

SELECTED ACTION PROGRAMME *NB All relevant basic measures, general supplementary measures and SEA mitigation measures apply*	
Point Sources	WWTP measures are summarised in the table below. WWTP upgrades & licensing Examine the terms of discharge authorisations to determine whether they require review for the purpose of compliance with water body objectives including protected area objectives and environmental quality standards.
Diffuse Sources	Good Agricultural Practice Regulations inspections/enforcement Septic tanks - The 6025 at risk septic tanks are to be prioritised for inspections. Subsequent upgrade or connection to municipal systems depends on inspection and economics tests.
Other	Abstractions - future national licensing controls to be introduced Investigation required to determine impact of channelisation on status
Future Developments	Throughout the river basin management cycle future pressures and developments will need to be managed to ensure compliance with the objectives of the Water Framework Directive and the Programme of Measures will need to be developed to ensure issues associated with these new pressures are addressed.

OBJECTIVES	
Good status 2015	There are 7 river water bodies at satisfactory condition and should be retained at good status. 5 river water bodies have an objective to achieve good status by 2015. There are 5 lake water bodies at satisfactory condition and should be retained at high or good status. 11 lake water bodies have an objective to achieve good status by 2015.
Alternative Objectives	**Extended Timelines** – there are extended timescales for the achievement of good status proposed to 2021 for 29 river water bodies and 15 lake water bodies within the WMU.

Woodford Water Management Unit Action Plan

WWTP Measures

Point Source Discharge	County	Priority	Measure (Capital Works)	Date	WMU
Ballybay WWTP	Monaghan	2	Provide tertiary treatment or relocate outfall.	2015+	Woodford
Ballybay WWTP	Monaghan	2	Provide nutrient removal or relocate outfall.	2015+	Woodford
Cavan WWTP	Cavan	1	Increase capacity of treatment plant.	2015	Woodford
Cavan WWTP	Cavan	1	Provide tertiary treatment or relocate outfall.	2015	Woodford
Point Source Discharge	**County**	**Priority**	**Measure (Investigation before Capital Works)**	**Date**	**WMU**
Ballinagh WWTP	Cavan	3	Investigate the need for tertiary treatment or for the relocation of the outfall.	2015	Woodford
Point Source Discharge	**County**	**Priority**	**Measure (Plants requiring the Implementation of Performance Management System(PMS))**	**Date**	**WMU**
Ballinagh WWTP	Cavan	1	Implementation of PMS	2012	Woodford
Cootehill WWTP	Cavan	1	Implementation of PMS	2012	Woodford
Point Source Discharge	**County**	**Priority**	**Measure (Plants requiring the investigation of Combined Sewer Overflows (CSOs))**	**Date**	**WMU**
Rockcorry WWTP	Monaghan	3	Investigation of CSOs	2015+	Woodford
Ballybay WWTP	Monaghan	2	Investigation of CSOs	2015+	Woodford
Point Source Discharge	**County**	**Priority**	**Measure (Ensure capacity of treatment plant is not exceeded)**	**Date**	**WMU**
Ballinagh WWTP	Cavan	3	Ensure capacity of treatment plant is not exceeded	2010	Woodford
Cootehill WWTP	Cavan	3	Ensure capacity of treatment plant is not exceeded	2010	Woodford

River Data

IE_NW_Woodford																	
			Biological Elements				Supporting Elements					Protected Areas					
Member State Code	Monitored Y (Extrapolated N)	Donor Waterbody	Macroinvertebrates (Q)	FreshWater Pearl Mussel	Fish	Phytobenthos (Diatoms)	Morphology	Specific Pollutants	Physio-chemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Drinking Water	Objective	Date objective to be achieved
NW_36_1050	N	NW_36_895								G						GES	2009
NW_36_1058	Y		P						H	P						GES	2021
NW_36_1068	Y		P						H	P						GES	2021
NW_36_1072	Y								G	G						GES	2009
NW_36_1102	Y		M						H	M						GES	2021
NW_36_1181	Y		P						H	P						GES	2021
NW_36_1328	N	NW_37_3105								M		Y				GES	2015
NW_36_1334	N	NW_36_895								P						GES	2021
NW_36_1443	Y		G						H	G						GES	2009
NW_36_1462	N	NW_36_1102								M						GES	2021
NW_36_1478	N	NW_36_237								P						GES	2021
NW_36_1522	N	NW_36_2024								M						GES	2015

Woodford Water Management Unit Action Plan

River Data

IE_NW_Woodford																	
			Biological Elements				Supporting Elements					Protected Areas					
Member State Code	Monitored Y (Extrapolated N)	Donor Waterbody	Macroinvertebrates (Q)	FreshWater Pearl Mussel	Fish	Phytobenthos (Diatoms)	Morphology	Specific Pollutants	Physio-chemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Drinking Water	Objective	Date objective to be achieved
NW_36_1557	Y								G	G						GES	2009
NW_36_1559	N	NW_36_672								M						GES	2015
NW_36_1654	Y		P				G		H	P						GES	2021
NW_36_1679	N	NW_36_1762								P						GES	2021
NW_36_1691	N	NW_36_895								P						GES	2021
NW_36_1762	Y		P						H	P						GES	2021
NW_36_189	Y		P						M	P		Y	Y	Y		GES	2021
NW_36_1947	Y		M						H	M						GES	2021
NW_36_2024	Y		M						H	M						GES	2021
NW_36_2061	N	NW_36_30								M						GES	2021
NW_36_2100	Y								G	G						GES	2009
NW_36_2116	N	NW_36_1058								P						GES	2021
NW_36_218	Y		P						H	P						GES	2021
NW_36_219	N	NW_36_1947								M						GES	2021
NW_36_228	Y		M				G		H	M						GES	2021
NW_36_237	Y		P						G	P						GES	2021
NW_36_2398	N	NW_36_2417								P						GES	2021
NW_36_2417	Y		M			P		H	G	P	G	Y	Y	Y	Y	GES	2021
NW_36_245	Y		G				G		H	G						GES	2009
NW_36_254	N	NW_36_1654								P						GES	2021
NW_36_30	Y		M			M		H	G	M	G					GES	2021
NW_36_341	N	NW_36_2024								M						GES	2021
NW_36_422	N	NW_36_596								M						GES	2021
NW_36_596	Y		M						G	M						GES	2021
NW_36_624	N	NW_37_3105								M						GES	2021
NW_36_672	Y								M	M						GES	2015
NW_36_684	N	NW_36_672								M						GES	2015
NW_36_786	Y									M						GES	2021
NW_36_895	Y		G						G	G						GES	2009

Woodford Water Management Unit Action Plan

Lake Data

IE_NW_Woodford																	
			Biological Elements			Supporting Elements					Protected Areas						
Member State Code	Name	Monitored Y (Extrapolated N)	Macrophytes	Chlorophyll	Fish	Morphology	Nutrient Enrichment	Physio Chemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Bathing Water	Drinking Water	Objective	Date objective to be achieved
NW_36_272	Mushlin (Lough)	N							G							GES	2009
NW_36_324	Cornaseer Lough	N							M							GES	2015
NW_36_331	Cornalara Lough	N							M							GES	2015
NW_36_336	Mill Lough	N							G							GES	2009
NW_36_349	Drumsaul Lough	N							M							GES	2015
NW_36_363	Tacker (Lough)	Y	M	M			M	M	M							GES	2021
NW_36_378	Asturral (Lough)	N							M							GES	2021
NW_36_382	Toome Or Crinkill Lough	N							G							GES	2009
NW_36_402	Drum Lough	N							M							GES	2021
NW_36_409	Killynenagh Lough	N							M						Y	GES	2021
NW_36_415	Drumgole Lough	N							M							GES	2015
NW_36_420	Naglare (Lough)	N							M							GES	2015
NW_36_421	Annaghierin Lough	N							M							GES	2021
NW_36_460	Coragh Lough	N							G							GES	2009
NW_36_515	Acanon (Lough)	N							M							GES	2015
NW_36_525a	Drumore Lough	Y	M	P		H	M	M	P							GES	2021
NW_36_525b	Drumlona L	Y	M	M		H	M	M	M							GES	2015
NW_36_526	Inner Lough	Y	P	B			M	M	P							GES	2021
NW_36_528	Sillan (Lough)	Y	M	M			M	M	M							GES	2021
NW_36_554	Beaghy Lough	N							M							GES	2021
NW_36_564	Farnharn Lough	N							H		Y	Y				HES	2009
NW_36_580	Derrygid Lough	N							M		Y	Y				GES	2021
NW_36_623	Bawn (Lough)	Y		P			M	M	P							GES	2021
NW_36_633	Coalpit Lough	N							M		Y					GES	2021
NW_36_635	Baraghy Lough	N							M						Y	GES	2015
NW_36_638	Avaghon (Lough)	Y	M	M			M	M	M							GES	2015
NW_36_641	Creeve Lake	N							M							GES	2015
NW_36_647	White Lough	Y	M	M			M	M	P	G					Y	GES	2021
NW_36_652	Inchin (Lough)	N							M		Y	Y				GES	2021
NW_36_671	Egish (Lough)	Y	B	P			M	M	B	G						GES	2021
NW_36_684	Namachree (Lough)	N							M						Y	GES	2015

Local Government (Water Pollution) Act 1977 (Water Quality Standards for Phosphorus) Regulations, 1998

MONAGHAN COUNTY COUNCIL

4th Implementation Report

July 2006

Local Government (Water Pollution) Act 1977 (Water Quality Standards for Phosphorus) Regulations, 1998.

4th Implementation Report

Monaghan Co Council.

Introduction:

The Phosphorus Regulations (1998) require the Monaghan Co Council to protect satisfactory waters and to improve unsatisfactory waters. Water quality interim targets have been set for 2007.However Monaghan Co Council has applied for an extension to 2013. (In the 2004 EPA audit, an EPA officer advised against reliance on the 2013 deadline as the more stringent Water Framework Directive deadline of 2015 for both good chemical and biological status will also need to be complied with.)
The Phosphorus Regulations require Monaghan Co Council to submit a biennial implementation report to the Environment Protection Agency. The 4th Implementation Report is due for submission to the Agency on 31/7/2006.

Section 1. Water Quality in Co Monaghan

River Monitoring

Baseline Data
The baseline data for the County, established from the EPA's Biological Monitoring Programme (Q Ratings) since 1995 indicates that 30% of river stations monitored were of satisfactory quality (Q rating ≥4) while 70% of stations monitored were unsatisfactory (Q rating ≤3-4). Table 1.1 refers.

Current Status Rivers
This 4th Implementation Report relates to the reporting period Jan 2004 to Dec 2005. Reference to physio-chemical data in this document relates to water quality monitoring carried out by Monaghan Co Council in the period Jan 2004 to Dec 2005.
Reference to river current Q ratings, relate to the Q rating assigned by the EPA. The 06 Hydrometric area was monitored in 2003 while the 03 and 36 Hydrometric areas were monitored in 2004. Table 1.1.refers
Current data indicates

- 33% (22 out of 66) of river stations monitored are classified as unpolluted (Q ratings > 4 - 2003/04 data). This figure is low by national standards.
- 24% (16No.) of river monitoring stations show an improvement in Q rating from baseline data

- 27% (18No.) of stations monitored show a decline in Q rating.
- 71% (55 out of 77) of stations with Q data and/or Median P values achieve standards set out in Section 3(2) of the Phosphorus Regulations. Section 3(2) allows compliance with the Phosphorus Regulation targets by achieving either the standards set for Q rating or MRP (Molybdate Reactive Phosphate) value.

Water Quality Trends: Rivers

Q Ratings

Since the 95-97 baseline period no significant improvement in overall biological water quality in the County is apparent. Although 24% of sites monitored in the 2003 and 2004 do show an improvement from baseline data, a further 27% of sites monitored show a decline in quality. Since the mid 90's there are no longer any pristine sites (Q 5) recorded in Co Monaghan. However the improvements in the Erne catchment noted in 2004 are promising.

Physio-chemical Data:

Water quality data does provide some information on water quality trends in the county. A decline in river phosphate levels has been noted in some rural areas. However, many other river stations do not show a similar decline as yet.

Noticeable water quality improvements have followed the upgrading of urban wastewater treatment plants and upgrading/removal of industrial treatment plant discharges. The Blackwater River below Monaghan Town and the Proules River below Carrickmacross have improved from baseline quality. However water quality in these river stretches – designated as "sensitive waters" under the Urban Waste Water Regulations, remains unsatisfactory (as defined by the EPA). Continued urban development is placing additional pressures on infrastructure and water quality downstream of urban areas. Discharges of untreated or partially treated urban waste waters via storm overflows or overloaded collection systems can have significant effects on water quality and these problems have been referred to Water Services for examination and appropriate remediation.

Since Jan. 2004 the frequency of river monitoring has been increased to 12 samples per annum every 2 years. Median P values are now available for almost all EPA Q rated sites. Results for Median P levels are shown in Table 1.1.

Lake Monitoring

Monaghan Co Council's lake monitoring programmes for 2004 and 2005 have been completed and results reported to the EPA. A total of 50 lakes have been monitored at sampling frequency of one lake sample per annum for the smaller lakes and two to four lake samples for the larger lakes. Lake sampling is resource intensive and Monaghan's sampling frequency has remained low. However the new Water Framework Directive Monitoring Programme, due to commence in Dec 2006 requires a review of sampling frequency – final details have yet to be decided.

Currently lake sampling is carried out in the summer months with the assistance of Civil Defence staff (2 persons) and equipment (boat and pickup truck) and a summer student. The current sample collection takes 10 to 12 days approximately. Water samples are analysed by the EPA Laboratory in Monaghan Town.

Due to low frequency of lake sampling only the Chlorophyll level can be used for classification purposes and compliance checking. If the Total Phosphorus (TP) parameter were to be included a minimum of 10 samples per annum would be required.

Lake Water Supply Sources
Work is currently ongoing to integrate the protection of the 23 lakes used as water supply sources into development planning and control. Maps of surface water sources are included in the current Draft Co Development Plan for Co Monaghan.

Current Status - Lakes

Lake Trophic Status (2004/2005)
The lake trophic status shown in Table 1.2 is derived from the maximum Chlorophyll level measured in the period 2004 to 2005. Current data indicates 46% of lakes comply with requirements of the Phosphorus Regulations based on chlorophyll levels only. Table 1:2 refers

Note:
Lake chlorophyll levels can fluctuate significantly throughout the year. Chlorophyll levels do not always indicate the same degree of eutrophication as do the available Total Phosphorus levels. Total Phosphorus levels in some lakes in Co Monaghan are extremely high.

Water Quality Trends: Lakes
The 2004/2005 lake data indicates an increased number of lakes in the satisfactory category (i.e oligotrophic and mesotrophic). However the high number of lakes (over 80%) with elevated Total Phosphorus levels is a cause for concern.
Tables A and B below show a comparison of current lake trophic status with baseline status and Lake Total Phosphorus (TP) levels for the 2001 to 2005 period..

Table A: Comparison of Lake Data 1995-2003

Annual Max Chlorophyll level ppb	Trophic Status	Baseline data 95-2001 (no. of lakes)	Current Trophic (2004/2005) Classification (no. of lakes)
<8	Oligotrophic		6
≥8 <25	Mesotrophic	11	9
≥25<75	Eutrophic	19	24
≥75	Hypertrophic	16	11

Table B: Lake Total Phosphorus Levels –Average Value of 2001 to 2005 data

Total Phosphorus Average Conc (ppb) 2001-2005 (MCC data)	No. of Lakes in each category
<30	8
30-59	16
60-99	17
>100	10

Water Framework Directive lakes:
Lakes proposed for additional monitoring under the Proposed WFD Monitoring Programme and their current trophic status includes:

Lake	Currrent Status
Avaghon lake	Mesotrophic (– but algal blooms noted in recent years)
Drumlona	Eutrophic
Emy	Mesotrophic
Egish	Eutrophic.
Inner	Hypertrophic
Naglack	Hypertrophic
Monalty	Hypertrophic
Muckno	Hypertrophic
White	Eutrophic
Dromore	Status unknown

Groundwater Quality
The Phosphorus Regulations 1998 deal with surface waters and although ground water quality may impact on surface waters sufficient data is not available in relation to this aspect. The situation regarding groundwater quality will be addressed as the Water Framework Directive is rolled out. A Groundwater Protection Scheme for Co Monaghan has been produced by the GSI. Work is currently ongoing to integrate the Groundwater Protection Scheme into planning decision making and maps of groundwater sources and resources are included in the current Draft Co Development Plan.

Section 2. Implementation of Measures

Monaghan Co Council's Measures Report in 1999 identified a need for additional resources to implement proposals to protect and improve water quality. Although additional staff were recruited following completion of negotiations under BLG (Better Local Government) in 2001, the Phosphorus Team has since lost 2 experienced Environmental Officers. One Environmental Officer (temp) is now in training.

Use of Consultants

In 2005 additional resources were allocated to employ consultants *(RPS Consultant Engineers*) to carry out farm surveys and to highlight farms that will require follow up action by the Council staff. However, without experienced field staff in-house catchment survey work and the necessary follow up of problem premises is currently suspended with a review of the situation due in October 2006.

Monaghan Co Council continue to use the services of Conservation Services to carry out detailed Biological Surveys of rivers. This work highlights "hot spots" and a number of such "hot spots" are awaiting follow-up surveys.

In the 2004-2005 period the Phosphorus Team has been involved in a number of specific work areas as follows:

- Catchment surveys - initially work has been concentrated moderately polluted river stretches and unsatisfactory lakes. Work has progressed well but extensive areas of the County are as yet not surveyed. See Map in Appendix 1 outlining Progress.
- Database management and updating GIS programme
- Review and updating of water quality monitoring programmes and the introduction of additional Biological Monitoring using a private consultant.
- A survey and report of Urban Wastewater Treatment plants and collection systems.
- Continued enforcement of Water Pollution Acts and Waste Management Act.
- Awareness raising to achieve sectoral involvement in protection and improvement of water quality.

The Phosphorus Team also tries to work closely with Planning control staff, other Environment Section staff and Water Services Section although more integration in this area is deemed necessary.

Future Developments in the area of Water Management

During 2004 a number of Projects relating to water quality issues in Co Monaghan have been initiated. These include:

- North South SHARE Project on River Basin Management Planning.
- Blackwater Regional Partnership TRACE Project on the Definition and Mitigation of Excessive Multi-source Nutrient Loss to Water, lead by University of Ulster and Queens University, Belfast.
- Churchill Oram Source Protection Pilot Scheme led by the National Federation of Group Water Schemes and the Freshwater Studies Unit at DKIT.
- Blackwater Vital Signs Schools project .

- Monaghan Co Council has participated in the Erne Blackwater Surface Waters Working Group.
- The County Development Board has included the Improvement of Water Quality in Co Monaghan as an Action in the CDB Strategy for Co Monaghan.

Monaghan Co Council will provide available water quality data for the Project leaders and is involved as Steering Group members and/or in an advisory role.
The benefits of such projects are expected to be increased knowledge of water quality issues, improved water quality management, improved public and sectoral participation. and increased awareness.

Section 3. Progress to Date

There is evidence that the biological quality of rivers continues to decline in Co Monaghan. Of particular concern is the recent loss of pristine and high quality sites in upland areas. It is expected that resource intensive catchment survey work, additional monitoring, enforcement and in some cases changes in land use or other measures will be required to bring about water quality improvements. It is expected that the turn-around period between intensive catchment survey work, enterprise improvements and water quality improvements could be a minimum of 2-3 years depending on catchment characteristics.

Improvements in Hydrometric Area 36 (Erne Catchment)
Promising results were evident in the 2004 EPA Biological Monitoring of Hydrometric Area 36 (Erne Catchment).

Although Monaghan Co Council have completed catchment survey work in sub-catchments of the Erne River (Bunnoe and Maghery Rivers have been surveyed in 2002 and 2003) improvements are also noted in other sub-catchments. It is suspected that the intensive surveillance and enforcement work carried out by the Northern Regional Fisheries Board (NRFB) for several years has contributed significantly to improvements in water quality in this area. Discussions with the Eastern and Northern Regional Fisheries Boards have revealed that additional resources have been dedicated to surveillance and enforcement work in the NRFB area for a number of years.

Progress has been made in pursuing measures set out to tackle water pollution in Co Monaghan. Improvement in the chemical data at some river stations is evident, upgrading of industrial treatment plants continues and investment in Water Services is ongoing. Progress in various work areas is detailed below and in Table 3,4, and 5 attached in Appendix 2. However additional resources are considered necessary to successfully identify and follow up on pollution sources in the county.

Catchment Surveys

Catchment surveys commenced in May 2002 with a focus on small rural catchments where water quality was classified as moderately polluted. All agricultural, industrial and commercial premises were surveyed in each catchment. Communal septic tanks and village areas were also surveyed. The aim of catchment surveys was to identify and eliminate point sources of pollution and identify potential diffuse sources of pollution for further attention.
Over the period Jan 2004 to Dec 2005, a total of 352 premises (mainly agricultural) were surveyed. 110 advisory letters were issued, 21 Section 12 Notices were issued. A total of 450 reinspections of silage making facilities (including facilities surveyed pre 2004) and 158 reinspections of medium and high-risk wintering facilities were reinspected in the summer and winter periods respectively.

Current Status of Catchment Survey Work Table (refer to Map of progress Appendix 1)

Table C

Catchment /River	Survey By	Comments
Emy Lough catchment	2003, MCC Staff	Limited follow up of due
Mountain Water Tributary	2004/05 -TRACE Project	Pollution mitigation measures due to be installed in 2006
Scotstown River	2004, MCC Staff	Follow up inspections due
Blackwater (upper reaches)	2004, MCC Staff	Follow up inspections due
Maghery, Kilcoran and Magherarney Lakes	2002 MCC	Limited follow up due
Lough Oony	2003 MCC	Follow up on 1 farm due
Conawary River	2005/06 MCC	Follow up inspections due
Ballagh lake	2006 MCC	Follow up inspections due
Clontibret Stream	2003/04 MCC	Follow up inspections due
Bunnoe River and Annamakerrig Lake	2003 MCC	Limited follow up due
Drum lake	2003 MCC	Limited follow up due
Avaghon lake Stream, Mullanary and Corkeeran Lakes	2002 MCC	Limited follow up due
Namachree Lake	2002 MCC	Follow up on 1 septic tank due
Milltown lake Catchment	2005/06 Dundalk Inst. Of Tech.	Extensive monitoring completed – Farm and septic tank survey due 2006
Rossdreenagh River	2006 RPS on behalf of MCC	All follow up outstanding. (MCC to carry out follow up
Inner Lough	2003 NRFB	

Database Management and Mapping

Consultants completed a GIS Mapping Project and Sludge Management Plan for Co Monaghan in Spring of 2002. The GIS Project provides a comprehensive mapping tool for catchment survey work. As the catchment surveys progress it is intended that data on all enterprises are entered on an access database and mapped using GPS.

Due to the extent of agricultural activities in the County and their potential impact on the environment, work commenced in 1999 on collection of relevant agricultural data. A comprehensive database on intensive agricultural enterprises, soil phosphorus returns, and a poultry manure waste tracking system has been established.

Monitoring Programmes

Lake Monitoring Programme
As detailed in Section 2 page 3.

River Monitoring
From Jan 2004 monthly river water samples have been collected and each river monitored for one 12 month period every two years. This work is contracted out to the EPA Regional Lab, Monaghan Town. The river sampling programme has been extended to include all river stations Q rated since 1995.

Additional Monitoring
Additional Monitoring Programmes carried out to identify "Hot Spots" and provide additional information of water quality in selected catchments and their tributaries are shown on Table D below.

Table D

River	Type of Monitoring	Comments
R Blackwater (03/B/01), and Tributaries including 03/S/02, 03/S01,	Physio-chemical, flow and biological monitoring in 2002-2003 period	Partial catchment survey work carried out in 2004– survey follow up due.
Mountain Water (03 M01) and Tributaries	Physio-chemical and biological monitoring – 2003-2004 period	Some problem areas identified – catchment awaiting survey
Emy Lough Stream	Physio-chemical and biological monitoring in 2004	Mini catchment survey completed 2003.
Finn River (36/F/01) and Tributaries	Physio-chemical monitoring 2004	Not yet scheduled for catchment Survey
Avaghon Lake Stream (36 A07)	Post survey Biological Monitoring	Catchment surveyed 2002, Lake outflow identified as significant
Maghery River (36/M/03)	Post survey Biological Monitoring	Both catchment survey in 2002 and Biological Monitoring 2005 failed to pinpoint source of low Q values in the upper reaches.
Knappagh (36/K/01)	Biological Monitoring (partial survey)	Suspected source ceased, River Q improved.
Conawary Lower (03/C/01) and tributaries	Physiochemical Monitoring	Catchment Survey 2005/06. Follow up due.
Proules (06/P/01)	Biological Monitoring (partial Survey)	Mini catchment Survey- urban sources of pollution identified

General Activities under the Water Pollution and Waste Management Act:

General activities of the Environment Section in the reporting period 2004 to 2005 Monaghan Co Council include the following enforcement work under the Water Pollution and Waste Management Acts.
11 cases referred for prosecution under of the WPA and WMA
28 Section 12 notices have been issued
17 Section 55 Notices have been issued.
The Council's Environment Section continues to investigate environmental complaints. Approximately 800 environmental complaints were received in From Jan 2004 to Dec 2005, many of which related to illegal dumping and litter. 58 water pollution complaints were investigated in same period.

Industrial Discharges
Significant improvements have been carried out by Industry in Co Monaghan. There are currently 22 "active" Licences issued under Section 4 of the Water Pollution Act. The are currently Section 4 Licence applications under consideration Almost all active Licences have been inspected at least once in the 2004 to 2005 period and monitoring of discharges is ongoing.
No prosecution cases for breaches of Section 4 of the WPA were taken in this period.

Landfill
Monaghan Co Council's Landfill being operated under a Licence from the EPA.

Awareness Raising During 2004 and 2005

The Phosphorus Teams Awareness Raising Programme has included the following activities:
Information / Public Meetings, During the reporting period a total of 5 meetings with the following groups were organized, IFA, Northern and Eastern Regional Fisheries Boards, and an Industry Group. Council staff gave presentations at 3 meetings organized by the IFA Co Executive and IFA Waste Management Committee. Presentations were given at 4 REPS meetings at the request of a REPS Planner. The Co Development Board Environment and Agriculture Working Group, the Erne Blackwater Surface Water working Group and TRACE Steering Group Meetings have also increased networking and information sharing between Council, stakeholders and research bodies.
Catchment Information Leaflets
Individual information leaflets with local water quality information have been produced for each catchment surveyed. Leaflets are distributed to each premises surveyed. See Appendix 2.
Information Leaflets on *Managing Phosphorus in Farming* (2 No) and *Prevent Silage Pollution* have been produced and pre 2004 were circulated via the Dairy CoOps. We continue to send out these leaflets where a need /problem is identified. A leaflet on *Septic Tank and Wastewater Treatment System Guidelines* has been produced and is distributed

to households with problem or suspect septic tanks. From June 2006 it is proposed to circulate the "Septic Tank/Treatment System "leaflet with planning approval notices.
Press Articles and Adverts/ Radio A total of 25 articles and adverts relating to water quality appeared on local press. Adverts related to Good Farming Practice, slurry spreading and silage making. Articles on general water quality were placed in 2 Council Environment Bulletins.
Advisory Letters. Approximately 80 farmers were sent advisory letters in relation to Soil Testing for Phosphorus. Over 110 advisory letters have been issued following catchment surveys.
One to one Site meetings Staff have carried out over 400 site visits in relation to catchment surveys and water pollution complaints during the2004 and 2005 period.

Liaison with the Planning Section

Environment section staff continues to liaise with the Planning Section regarding environmental assessment and control of new developments. A very substantial (two and a half fold) increase in the number of planning files examined by the environment section was recorded in the 2004-2005 period. In the period 2004 to 2005 the environment section have examined and reported on 761 planning files that include 205 agricultural, 201 housing schemes, 364 industrial/commercial developments and 9 public schemes. Contributions have been submitted to the proposed Development Plan to improve aspects of sustainable development.

Period	Agricultural	Comm./Industrial	Housing Dev/ other	Other	Totals
2003-2003	113	93	52		258
2004-2005	205	346	201	9	761

Liaison with Water Services:

A member of the Phosphorus Team surveyed 21 local authority operated waste water treatment plants in early 2005. A report is currently in preparation and will be presented to management and discussed with Water Services in late 2006.

Problems Encountered

The continued decline in water quality is still evident.
Development pressures are a cause for concern. A very substantial increase in development activity is evident. Criteria for sustainable development would be useful.
Monitoring of new developments to ensure compliance with planning conditions attached to protect waters is considered necessary but as yet not undertaken.

Staff Retention – the Phosphorus Team lost 2 fully trained members of staff one in May 2004 and the second in May 2006. Some slow down in catchment survey work is evident as a result. In addition to replacement of staff members with trained officers it is essential that further resources will be required to achieve the targets set in the Phosphorus Regulations and to build capacity within the council to implement the required programme of measures that will accompany the River Basin Management Plans under the Water Framework Directive.
Lack of integration of environmental protection policies into the activities of various sectors (particularly in the recent past).
Cross border pollution incidents can be more difficult to resolve.
It would be beneficial to develop a reliable risk assessment tool for diffuse source pollution.
Computer facilities/tools for the interrogation of environmental data and trend analysis are also considered necessary.
The local authority role of "poacher" and "gamekeeper" can give rise to concerns by the public of the effectiveness of local authority's pollution control role.

Successes to date

The review of CAP and the changes in farm payments from production based payments to single payments scheme is likely to benefit water quality in the medium to long term.
Information meetings resulted in offers of cooperation and are considered very beneficial.
Good relationships with industry and improvements in industrial wastewater treatment in recent years.
Cooperation with the IFA is resulting in regular contacts with farming groups. Staff are encountering a positive response to site inspections on farms.
The EPA biological monitoring for one of the three catchments surveyed by council staff in the 2002/2003 period indicated significant improvements in water quality in 2004. The other two catchments remain as yet moderately polluted – requiring further investigation.
Improvements in the Biological Quality of the Erne Catchment are promising (page 8 refers)
Participation in projects described on page 6 should result in better knowledge of activities contributing to water pollution, effective mitigation measures and improved participation.

Summary

Co Monaghan faces a particular set of problems in relation to water quality, which to some extent are unique to this county. It is a drumlin county, with heavy soils in many areas resulting in high runoff risk. The extent of intensive agricultural activities in Co Monaghan poses problems for the recovery /disposal of agricultural waste in an environmentally sustainable manner. In addition many of the county's rivers have low assimilative capacity.

Rapidly expanding industrial and commercial activities, rural housing and expansion of urban areas need to be controlled and monitored. Monaghan Co Council need a fully resourced and dedicated Team to progress measures set out in the Measures and Implementation Reports
There will be ongoing review of measures to maximize effectiveness of measures to improve water quality in the county.