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Administration,
Environmental Licensing Programme,
Office of Climate, Licensing & Resource Use,
Environmental Protection Agency,
Regional Inspectorate,
Inniscarra,
County Cork.

30th September 2010 D0299-01

Re: Notice in accordance with Regulation 18(3)(b) of the Waste Water Discharge (Authorisation) Regulations 2007

Dear Mr Huskisson,

With reference to the notice received for the Ballymakeera Waste Water Discharge Licence Application on the 2nd of June last and Cork County Council's response of the 24th June seeking a revised submission date of the 30th of September 2010 please find our response attached.

Yours Faithfully

Patricia Power
Director of Services,
Area Operations South,
Floor 5,
County Hall,
Cork.

Revised Non-Technical Summary – Sept 2010

Ballyvourney and Ballymakeera are two contiguous settlements located approximately 15 kilometres northwest of Macroom on the main N22 Cork to Killarney road and are the largest settlements located within the Muskerry Gaeltacht region.

The Waste Water Works and the Activities Carried Out Therein

Until the sewer upgrade in 2007 the sewer network served only the eastern part of the combined area and discharged to a septic tank which has an outfall that discharges to the River Sullane. The existing sewers had inadequate capacity and some of the older pipelines had been laid at a relatively flat fall and so could not achieve self cleansing velocities.

In 2007 the sewer network was upgraded, a new foul line was laid and the existing foul sewer is now operating as a storm water system. The wastewater from the west of the village gravitates to the septic. The wastewater from the east of the village gravitates to a pumpstation and is then pumped to the septic tank via a rising main.

Ballyvourney / Ballymakeera septic tank was built at a time when the PE contributing to it was far less than the present PE. The current PE contributing to the septic tank is approximately 1343. In 2007 a separate storm system was installed to discharge storm water directly to the River Sullane. This reduced the hydraulic load entering the septic tank. The passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant.

Currently, influent flows entering the inlet works of the plant range from 50m^3/d to 225m^3/d with an average inflow of 138m^3/d entering the plant per day.

A new waste water treatment plant to cater for a PE of 2,200 is planned for Ballymakeera. The proposed plant is to be designed to comply with Salmonid Regulations and the Phosphorus Regulations.

At the time the original application was submitted in February 2009 the proposals for Ballymakeera WWTP were to proceed to construction in 2011. These plans have not progressed. The 2010-2012 Assessment of Needs Programme (attached) show Ballymakeers WWTP proposals progressing through the planning process in 2012. Therefore construction of a new plant will not begin until 2013 at the earliest.

As a minimum, the construction of the works shall have the following units:

- Inlet Pumpstation c/w Storm Overflow Screen
- Inlet works shall be provided c/w 6mm screen, bypass screen, screenings handling and grit removal
- Flow Dividing Chamber to split treatment flows
- 2 No. Aeration Tanks c/w Anoxic Zones and FBDA system (volume of approx 330m^3 each)
- 2 No. Final Settlement Tanks (6.8m internal diameter with sidewall liquid depth of 2.5m)
- Return and Waste Sludge Pumping Facilities
- Sludge Thickening and Storage facilities (4m internal diameter picket fence thickener with liquid depth of 3.5m)
- Sludge Dewatering Facility
- Phosphorus Dosing Facility
- Stormwater holding Tank (volume of approx 155m^3)
- Instrumentation and Control Equipment
- Treated Effluent Outfall pipeline
- Site Roads and Fencing, Landscaping, Process and Drainage pipework, Telemetry and SCADA control system
- Administration and Control Building including Sludge Dewatering facility

The Sources of Emissions from the Waste Water Works

The population load for the Ballyvourney / Ballymakeera agglomeration arises from the following areas:

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

The Ùdaràs na Gaeltachta industrial estate treats their effluent to certain degree prior to discharging it to the public sewer for treatment in conjunction with the domestic waste.

Other potential emissions from the waste water treatment plant include odour generated from the treatment process – there have been no recorded issues to date.

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

The final effluent is discharged to the River Sullane. The maximum flow to the waste water treatment plant is approximately 225m^3/d. The maximum predicted flow from the new waste water treatment plant is 495m^3/d. It will be a requirement that independent treatment streams of 1,100 PE each are implemented into the design of the plant in order to ensure that the treatment plant is not under-loaded if the future development is not realised.

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

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

The new plant will include the following elements:

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

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

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

Cork County Council have already purchased a site approximately 0.583 acres for the proposed location of the treatment plant. The proposed plant is to include a telemetry and SCADA control system to ensure that the plant is operating sufficiently at all times. The upgrading of the plant will ensure that the basic obligations of the operator are being adhered to.

Measures planned to monitor emissions into the environment

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

CONTRACTS AT CONSTRUCTION

Scheme Name	Contract Name	W/S	Estimated Cost €
Cork County			
Ballincollig Sewerage Scheme (G)	· Emergency Treatment Plant Upgrade	S	1,500,000
	· Network (Green Route)	S	2,500,000
Bantry Interim Water Supply Scheme	· Civil Works	W	3,411,000
	· M&E Works	W	1,678,000
Bantry Sewerage Scheme	· Network (Civil Works)	S	5,694,000
	· Network (M&E Works)	S	3,378,000
Blarney Water Supply Scheme Phase 1 (SLI)	· Network (Extension to Station Road)	W	216,000
Cloughduv Sewerage Scheme	· Contract 1 (Civil Works)	S	1,480,000
Cloughduv Water Supply Scheme	· Contract 1 (Civil Works)	W	1,650,000
Cobh/Midleton/Carrigtwohill Water Supply Scheme	· Contract 3 (Network)	W	3,144,000
Dripsey/Coachford Water Supply Scheme	· Contract 1 (Civil Works)	W	3,252,000
Innishannon Water Supply Scheme	· Civil Works	W	6,490,000
	· M&E Works	W	1,160,000
Killeagh Sewerage Scheme	· Contract 1 (Treatment Plant Upgrade)	S	462,000
Kinsale Sewerage Scheme	· Contract 3 (Network)	S	7,654,000
	· Contract 4 (Network)	S	2,260,000
	· Wastewater Treatment Plant - DBO	S	10,289,000
Schull Sewerage Scheme	· Network (Civil Works)	S	2,424,000
	· Network (M&E Works)	S	506,000
Water Conservation Stages 1 & 2 Works	· Water Conservation Stages 1 & 2 Works	W	18,364,000
Watergrasshill Water Supply Scheme	· Contract 1 (Civil Works)	W	3,770,000
Kerry			
Kilcummin/Barraduff Sewerage Scheme	· Barraduff Wastewater Treatment Plant - DBO	S	2,599,000
NSS Hub Cluster Sewerage Scheme	· Firies Wastewater Treatment Plant - DBO	S	2,787,000
NSS Hub Cluster Sewerage Scheme	· Milltown Wastewater Treatment Plant - DBO	S	3,496,000
Water Conservation Stages 1 & 2 Works	· Water Conservation Stages 1 & 2 Works	W	2,882,000
TOTAL			**93,046,000**

CONTRACTS TO START 2010 - 2012

Scheme Name	Contract Name	W/S	Estimated Cost €
Cork City			
Cork City Water Supply Scheme (G)	· Lee Road Water Treatment Plant Upgrade	W	17,500,000
	· Network (Shanakiel Rising Main)	W	1,900,000
	· Network (Wilton Lee Road Trunk Main)	W	2,900,000
Docklands Water Supply Scheme (G)	· Contract 1 (Network)	W	5,600,000
Water Conservation Stage 3 Works (G)	· Watermains Rehabilitation Project Phase 1	W	12,200,000
Cork County			
Ballincollig Sewerage Scheme (G)	· Wastewater Treatment Plant Upgrade (Advance Works)	S	5,000,000
Baltimore Sewerage Scheme	· Network	S	750,000
Bandon Sewerage Scheme Phase 2	· Network	S	12,000,000
	· Wastewater Treatment Plant Upgrade	S	1,000,000
Bantry Water Supply Scheme Phase 2	· Network	W	1,897,000
Blarney Tower Sewerage Scheme (G)	· Network (Cloghroe)	S	600,000
	· Network (Overflows)	S	5,000,000
Carrigtwohill Sewerage Scheme (SLI)	· Wastewater Treatment Plant Upgrade	S	14,000,000
Castletownbere Regional Water Supply Scheme Phase 1	· Water Treatment Plant, Reservoir & Network	W	6,000,000
Clonakilty Sewerage Scheme	· Wastewater Treatment Plant Upgrade	S	5,000,000
Coachford Sewerage Scheme (SLI)	· Network	S	1,447,000
Conna Regional Water Supply Scheme Phase 1	· Reservoir	W	1,000,000
Courtmacsherry/Timoleague Sewerage Scheme	· Treatment & Network	S	5,000,000
Crookstown Sewerage Scheme (SLI)	· Network	S	1,000,000
	· Wastewater Treatment Plant Upgrade	S	1,400,000
Dunmanway Regional Water Supply Scheme Phase 1	· Water Treatment Plant Upgrade	W	1,000,000
Dunmanway Regional Water Supply Scheme Phase 2	· Treatment & Network	W	6,760,000
Dunmanway Sewerage Scheme	· Network	S	400,000
Inniscarra Water Treatment Plant (G)	· Sludge Treatment Upgrade	W	5,570,000
Innishannon Sewerage Scheme (SLI)	· Wastewater Treatment Plant Upgrade	S	2,000,000
Kinsale Sewerage Scheme	· Storm Tank	S	1,000,000
Leap/Baltimore Water Supply Scheme Phase 1	· Contract 1 (Network)	W	2,200,000
Little Island Sewerage Scheme	· Network	S	600,000
Mallow Sewerage Scheme (H)	· Network	S	5,000,000
	· Wastewater Treatment Plant (Nutrient Reduction)	S	1,000,000
Mallow/Ballyviniter Regional Water Supply Scheme Phase 1 (H)	· Network (Box Cross)	W	4,000,000

Midleton Sewerage Scheme (SLI)	·	Wastewater Treatment Plant Upgrade	S	2,288,000
Riverstick Sewerage Scheme	·	Wastewater Treatment Plant Upgrade	S	1,200,000
Schull Water Supply Scheme Phase 1	·	Treatment Plant & Network	W	5,600,000
Skibbereen Regional Water Supply Scheme Phase 4	·	Treatment & Storage	W	2,500,000
Water Conservation Stage 3 Works	·	Watermains Rehabilitation Project Phase 1	W	23,213,000
West Cork Grouped DBO Scheme[1]	·	Wastewater Treatment Plant - DBO	S	6,950,000
Youghal Sewerage Scheme	·	Network	S	8,000,000
	·	Wastewater Treatment Plant - DBO	S	10,000,000
Kerry				
Central Regional Water Supply Scheme (H)	·	Scart Reservoir	W	5,070,000
	·	Water Treatment Plant - DBO	W	22,730,000
Kenmare Sewerage Scheme	·	Wastewater Treatment Plant Upgrade	S	9,800,000
Kenmare Water Supply Scheme	·	Water Treatment Plant - DBO	W	6,000,000
Water Conservation Stage 3 Works	·	Watermains Rehabilitation Project Phase 1	W	18,790,000
Waterville Water & Sewerage Scheme	·	Water & Waste Treatment Plants - DBO	S	10,500,000
Waterford County				
Lismore Sewerage Scheme (SLI)	·	Wastewater Treatment Plant Upgrade	S	1,140,000
West Waterford Water Supply Scheme Phase 1	·	Contract 1 (River Finisk Borehole)	W	525,000
TOTAL				**265,030,000**

[1]Skibbereen, Schull, Baltimore & Dunmanway

SCHEMES AT PLANNING STAGES 2010 - 2012

Scheme Name	W/S
Cork City	
Carrigrennan Wastewater Treatment Plant Upgrade (G)	S
Cork City Water Supply Scheme (Storage Mt Elma, Ballincollig & Chetwynd) (G)	W
Cork City Water Supply Scheme (Storage at Low Intermediate Level) (G)	W
Docklands Sewerage Scheme (G)	S
Water Conservation Stage 3 Works	W
Cork County	
Ballincollig Sewerage Scheme (G)	S
Ballyvourney/Ballymakeera Sewerage Scheme (Treatment Plant)	S
Banteer/Dromahane Regional Water Supply Scheme	W
Bantry Sewerage Scheme	S
Bantry Water Supply Scheme	W

Castletownbere Sewerage Scheme	S
Conna Regional Water Supply Scheme	W
Cork City Sewerage Scheme (Tramore River Valley - Study)	S
Cork Lower Harbour Sewerage Scheme	S
Cork North East Water Supply Scheme	W
Cork Sludge Management Scheme (G)	S
Drimoleague Sewerage Scheme	S
Dripsey Sewerage Scheme	S
Dunmanway Regional Water Supply Scheme	W
Fermoy Sewerage Scheme	S
Garrettstown/Ballinspittle Sewerage Scheme	S
Glanmire/Riverstown/Little Island Stormwater Separation Study	S
Leap/Baltimore Water Supply Scheme	W
Mallow/Ballyviniter Regional Water Supply Scheme (H)	W
Millstreet Sewerage Scheme	S
Mitchelstown/North Galtees Water Supply Scheme	W
Mitchelstown Sewerage Scheme	S
Monard New Town - Water Services Study	W/S
Rosscarbery/Owenahincha Sewerage Scheme	S
Saleen Sewerage Scheme	S
Schull Water Supply Scheme	W
Shanagarry/Garryvoe/Ballycotton Sewerage Scheme	S
Shannonvale Sewerage Scheme	S
Skibbereen Regional Water Supply Scheme	W
Whitegate/Aghada Sewerage Scheme	S
Youghal Water Supply Scheme	W
Water Conservation Stage 3 Works	W

Kerry

Castlemaine Sewerage Scheme	S
Glenbeigh Sewerage Scheme	S
Kilcummin Sewerage Scheme	S
Water Conservation Stage 3 Works	W

Notes:

H refers to a Hub as designated in the National Spatial Strategy

G refers to a Gateway as designated in the National Spatial Strategy (Towns in the Dublin local authorities and in Counties Meath, Kildare and Wicklow all fall within the Greater Dublin Area as designated in the National Spatial Strategy)

S refers to wastewater infrastructure

SLI refers only to contracts appproved to commence in the period 2010-2012 under the Serviced Land Initiative, largely arising from contractual commitments, as this initiative is otherwise discontinued.

W refers to water supply or water conservation

Wastewater Discharge Licence Application: D0299-01 Ballymakeera

Circular L8/08 2 September 2008
Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments

APPENDIX 1
Water Services Schemes - Natural Heritage Checklist for Local Authorities

What projects must be screened?

For new projects and significant changes to any existing operations, if the answer is 'yes' to any of the following, the project (i.e. construction, operation and maintenance) must be screened for its impacts:	
1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?	No
2. Will nationally protected species be directly impacted? Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999)?	No
3. Is the development a surface water discharge or abstraction in the surface water catchment, or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species?	no
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5 km of a nature conservation site with water-dependant qualifying habitats/species2?	No
5. Is the development in the surface water or groundwater catchment of salmonid waters?	yes
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc?	no
7. Is the development a surface discharge or abstraction to or from marine waters and within 3km of a marine nature conservation site?	No
8. Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species?	No

Ballymakeera Regulation 18 Further Information Response

Question 1 **Assess the likelihood of significant effect of the waste water discharges from the above agglomerations on the relevant European sites by referring to Circular L8/08 "Water Services Investment and Rural Water Programmes – Protection of Natural Heritage and National Monuments" issued by the Department of Heritage and Local Government. In particular, the flow diagram in Appendix 1 should be completed and the results of each section recorded. Provide details of the results of this assessment within one month of the date of this notice and provide a reasoned response for the decision. If significant effects are likely then and appropriate assessment must be carried out and a report of this assessment forwarded to the Agency by the date specified below. You are advised to provide the requested information in accordance with the "Note on Appropriate Assessments for the purposes of the Waste Water Discharge (Authorisation) Regulations, 2007 (S.I. 684 of 2007)".**

Habitats Directive Assessment (Screening Report) in respect of Application by Cork County Council to the EPA for Wastewater Discharge License for Ballymakeera Agglomeration.

September 2010

1 Introduction

1.1 Ballymakeera Wastewater Discharge Licence application covers the Ballyvourney/Ballymakeera agglomeration. Ballyvourney and Ballymakeera are two contiguous settlements located approximately 15 kilometres northwest of Macroom on the main N22 Cork to Killarney road and are the largest settlements located within the Muskerry Gaeltacht region.

The Village of Ballymakeera (Baile Mhic Ìre) is served by a septic tank which discharges into the Sullane River. It was built to treat waste from a population much smaller than that which it currently serves. In 2007/2008 some work was done on the sewer network in the two villages which removed storm water from the system and relaid some sewers to a suitable gradient. Currently the septic tank treats waste of approx. 1400 pe which includes some industries and the domestic waste from most of Baile Mhic Ìre and some of Baile Mhuirne.
The application for the discharge licence was submitted in Feb 2009 and contained proposals for replacing the Septic tank with a new WWTP designed for 2200pe. Construction was to be completed by 2011. Due to the economic downturn this will not now be completed by 2011. The revised Water Services Investment Programme for 2010- 2012 provides for continuing with progressing the scheme proposed for this area. However it will only advance through the planning stage in this timeframe.

It is not clear at this point in time if a new WWTP will be built in Baile Mhic Ìre over the lifetime of this Licence. Therefore we are carrying out the assessment here based on the assumption that the septic tank will be the only form of treatment available. If this changes over the lifetime of the licence the Agency will be informed immediately.

1.3 This document brings together all of the information necessary to make determination as to whether there are likely to be significant impacts arising from the discharge from the septic tank at Baile Mhic Ìre on the designated sites within the catchment area.

These are :-

SAC – St Gobnets Wood - approx 2km upstream of discharge location where the qualifying habitat is not water dependent

SPA - Mullaghanish to Musheramore – protected species Hen Harrier – Not water dependent. Stream in site joins the Foherish River which in turn joins the Sullane 10km downstream of discharge location.

SAC – Mullaghanish – Musheramore – Same as above

SAC/SPA – The Gearagh – Located on River Lee approx 2km upstream of where Sullane meets Lee. The Sullane meets the Lee approx. 15km downstream of the Baile Mhic Ìre discharge location.

Based on the preliminary flow chart already carried out, the need for an assessment is solely to assess whether the Baile Mhic Ìre septic tank discharge has an impact on the salmonoid waters of the Lee. The septic tank discharges into the Sullane River which is in the Upper Lee Catchment Area. The Sullane meets the Lee approx 15km downstream of the discharge location.

2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Baile Mhic Ìre Septic Tank. See Location map – part A original application.
Description of the key components of the project	Baile Mhic Ìre septic tank serves a population equivalent of approx 1400. It was designed to treat a much smaller population when originally constructed. It discharges directly into the Sullane river.
Distance from designated sites in potential impact zone	15km from Salmonoid river (River Lee), See above for Natura sites in the vicinity.

2.2 Description of the Natura 2000 sites within the potential impact zone[1]	
Name	**None within impact zone**. Designated sites within the area are : St Gobnets Wood SAC is located approx 2km upstream of the discharge location and the qualifying habitats and species are not water dependent. Mullaghanish- Musheramore SAC/SPA – The qualifying habitats and species are not water dependent. A stream runs through the area which joins the Foherish river. The Foherish is a tributary to the Sullane and its confluence is approx 10km downstream of Baile Mhic Ìre. The Gearagh SAC/SPA is located on the River Lee approx 2km upstream of the Sullane/Lee confluence.
Site Code	N/A

[1] Natura 2000 sites within the potential impact zone of the proposed development have been identified in accordance with guidance provided in the NPWS circular L8/08.

2.3 Assessment Criteria	
Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Salmonoid River.	**Discharge from Baile Mhic Ìre septic Tank** *Wastewater from the septic tank is discharged into the Sullane river.The discharge consists of primary treated effluent from the septic tank The system is overloaded and the waste is not receiving proper treatment.* **Other Discharges in the vicinity:** Clondrohid – Two septic tanks discharging to the Foherish tributary of the Sullane. The Foherish/Sullane confluence occurs approx. 10km downstream of Baile Mhic Ìre *Coolcower septic tank (approx.pe 100) discharges directly into the River Lee downstream of the Lee/Sullane confluence.* Macroom WWTP discharges into the Sullane River. The lee and the Sullane combine approx 1km downstream of the Macroom discharge point.
Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Salmonoid river taking into account the following: o Size and scale o Land-take o Distance from the Natura 2000 site or key features of the site: o Resource requirements (water abstraction etc.) o Emissions (disposal to land, water or air) o Excavation Requirements o Transportation Requirements o Duration of construction, operation, decommissioning o Other.	Discharges could give rise to elevated nutrients entering the River Lee. Increased nutrients could have a negative impact on the fish life in the river.
Describe any likely changes to the site arising as a result of: o Reduction in habitat	**Reduction in habitat area:** N/A **Disturbance to key species:**

area o Disturbance to key species o Habitat or species fragmentation o Reduction in species density o Changes in key indicators of conservation value (water quality etc) o Climate Change	*Increased nutrients in the Sullane river and the river Lee downstream of the discharge location could have a negative effect on fish numbers in the Lee. However there is no evidence to support this.* **Habitat or species fragmentation:** *No water dependent species in the surrounding SAC's SPA's.* **Reduction in species density:** *N/A.* **Changes in key indicators of conservation value eg water quality:** *The South Western River Basin District have carried out a Water Management Unit Report on the Upper lee Catchment. This includes all the tributaries to the Lee upstream of Macroom. The Sullane is classified as having good water quality as is the upper Lee. The intention of the SWRBD is to preserve this good quality.* *The EPA water monitoring sites in the vicinity give a consistent Q rating of 4 upstream of the discharge location. Downstream of the discharge location has a Q rating of 4-5. (last available data 2008).* *As part of the Application process Cork County Council carried out limited sampling of water immediately upstream and downstream of the discharge point (depending on safe access)* *There is no evidence of deterioration of water quality associated with these results.*
Describe from the above those elements of the project of plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.	No significant impacts are predicted.

3. Finding of No Significant Effects Report Matrix

3.1 Project Description	
Name of project or plan	Baile Mhic Ìre septic tank discharge
Name of salmonoid River	River Lee
Description of the project or plan	The septic tank serves the village of Baile Mhic Ìre (Ballymakeera) and some of the neighbouring Baile Mhuirne (Ballyvourney). It also serves some industries from the Údaras na Gaeltachta site.
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No

3.2 The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	Septic tanks provide primary treatment only. The passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant. Generally the septic tank removes 50% of the particulate BOD and none of the soluble BOD. Typically BOD in urban wastewater is 50% particulate and 50% soluble, hence the septic tank removes 25% of the BOD from the wastewater. Baile Mhic Ìre septic tank provides a lower than average level of treatment as it is seriously overloaded. Though monitoring of the Sullane downstream of the discharge location shows no deterioration in quality over the last ten years, the assessment of the impacts of the discharge in relation to the 2009 EQS regulations found that in "worst case scenarios" the discharge is causing the river immediately downstream of the discharge to be in breach of these new standards. *(It should be noted here that where the breaches occur the EQS predicted impacts assessments are calculated using a 3DWF flow figure where the normal flow is that generated by the 1600pe. This pop figure is taken from the application as the population that **could** be contributing to the septic tank over the lifetime of the licence. When assessing the impacts for normal flow conditions i.e. using 1600pop the river is not in breach).*
Explain why these effects are not considered significant.	The Lee confluence is 12km downstream of the discharge location. The Sullane river downstream of Baile Mhic Ìre has a consistent Q value of 4-5 which means the river is not

	eutrophic. Therefore the discharge cannot be having an impact on the fish life in the river. If the Sullane is unaffected by the discharge it follows that the discharge is not impacting negatively on the Lee river. The breaches caused when assessing against the new EQS standards are based on very extreme flow figures (worst case scenario). In normal flow situations using a projected population figure of 1600 the discharge does not cause any breach in standards for water quality.

Data collected to carry out the assessment			
Who carried out the assessment	**Sources of data**	**Level of assessment completed**	**Where can the full results of the assessment be accessed and viewed**
Madeleine Healy y, Cork County Council	Cork Co Council EPA water quality monitoring data	Desktop review of cited data.	This report.

Question 2 **Review the assessment of the impact of the discharge in relation to the requirements of the Environmental Quality Objectives regulations (S.I. No. 272 of 2009) and resubmit and update where relevant**

The River Sullane into which the WWTP discharges has a “good status”. Therefore the lower “good” standard contained in the surface water regulations was used for comparison purposes.

The upstream and downstream sampling results for 2008 at aSW01u and aSW02d were compared to the relevant EQR/S from the surface water regulations in the following tables. The sample results and the EQR/S were included only if there were values for both, to allow comparison.

The upstream and downstream sample results incorporated in the following tables are those laid out in the upstream and downstream sheets of the Revised Table E. However many of these results are at the limit of detection, or are based on averages that include assumed figures. Therefore additional upstream and downstream tables which incorporate actual results for analysis below the Limit of Detection have been included. This “Analysis below the Limit of Detection” is laid out on a separate sheet in the Revised Table E.

UPSTREAM COMPARISON TABLE

Physico-chemical conditions	***Ecological quality ratio/standard***	***2008 upstream ambient sampling results at aSW01u***
	Good boundary	
	Rivers (All Types)	
Oxygenation conditions Table 9	***River water body***	***Ambient sampling results***
Biochemical Oxygen Demand (BOD) (mgO_2/l)	Good status≤1.5 (mean) or ≤2.6(95%ile)	<1.0mg/L (mean) <1.0mg/L (95%ile)
Acidification Status Table 9	***River Water Body***	***Ambient sampling results***
pH (individual values)	Soft Water 4.5<pH<9.0 Hard Water 6.0<pH<9.0	7.35
Nutrient conditions Table 9	***River Water body***	***Ambient sampling results***
Total Ammonia (mg N/l)	Good status≤0.065(mean) or ≤0.140(95%ile)	<0.1mg/L (mean) <0.1mg/L (95%ile)
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status≤0.035(mean) or ≤0.075(95%ile)	<0.05mg/L (mean) <0.05mg/L (95%ile)
Specific pollutants Table 10	***Inland surface waters AA-EQS***	***Ambient sampling results***
Phenol	8	<0.1µg/L
Toulene	10	<1.0µg/L
Xylene	10	<1.0µg/L
Arsenic	25	<0.96µg/L
Total Chromium	8.1	<20.0µg/L
Copper (depending on water hardness)	5	<20.0µg/L
Cyanide	10	<5.0µg/L
Flouride	500	21.0µg/L
Zinc (depending on water hardness)	50	<20.0µg/L
Priority Substances Table 11	***Inland surface waters AA-EQS***	***Ambient sampling results***
Atrazine	0.6	<0.01µg/L
Dichloromethane	20	<1.0µg/L
Simazine	1	<0.01µg/L
Lead and its compounds	7.2	<20.0µg/L
Nickel and its compounds	20	<20.0µg/L
Priority Hazardous Substances Table 12	***Inland surface waters AA-EQS***	***Ambient sampling results***
Cadmium and its compounds (depending on water hardness)	≤0.08	<20µg/L
Mercury and its compounds	0.05	<0.2µg/L

Note the following:

The black results are within the EQR/S.
The red results break the EQR/S.
The blue results may break the EQR/S.
The results highlighted grey are at the limit of detection.
Water hardness in the River Sullane is 24.8mg$CaCO_3$/L

UPSTREAM COMPARISON TABLE
(ANALYSIS BELOW THE LIMIT OF DETECTION)

Physico-chemical conditions	***Ecological quality ratio/standard***	***2008 upstream ambient sampling results at aSW01u***
	Good boundary	
	Rivers (All Types)	
Nutrient conditions Table 9	***River Water body***	***Ambient sampling results***
Total Ammonia (mg N/l)	Good status≤0.065(mean) or ≤0.140(95%ile)	0.045mg/L (mean) 0.053mg/L (95%ile)
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status≤0.035(mean) or ≤0.075(95%ile)	0.0098mg/L (mean) 0.0229mg/L (95%ile)
Specific pollutants Table 10	***Inland surface waters AA-EQS***	***Ambient sampling results***
Total Chromium	8.1	<1.0µg/L
Copper (depending on water hardness)	5	<1.0µg/L
Zinc (depending on water hardness)	50	<1.0µg/L
Priority Substances Table 11	***Inland surface waters AA-EQS***	***Ambient sampling results***
Lead and its compounds	7.2	<1.0µg/L
Nickel and its compounds	20	<1.0µg/L
Priority Hazardous Substances Table 12	***Inland surface waters AA-EQS***	***Ambient sampling results***
Cadmium and its compounds (depending on water hardness)	≤0.08	<1.0µg/L

Note: Actual result for Cadmium in sample was zero but <1 is recorded for reporting purposes.

DOWNSTREAM COMPARISON TABLE

Physico-chemical conditions	***Ecological quality ratio/standard*** ***Good boundary*** ***Rivers (All Types)***	***2008 Downstream ambient sampling results at aSW01d***
Oxygenation conditions Table 9	***River water body***	***Ambient sampling results***
Biochemical Oxygen Demand (BOD) (mgO_2/l)	Good status≤1.5 (mean) or ≤2.6(95%ile)	<1.0mg/L (mean) <1.0mg/L (95%ile)
Acidification Status Table 9	***River Water Body***	***Ambient sampling results***
pH (individual values)	Soft Water 4.5<pH<9.0 Hard Water 6.0<pH<9.0	7.1
Nutrient conditions Table 9	***River Water body***	***Ambient sampling results***
Total Ammonia (mg N/l)	Good status≤0.065(mean) or ≤0.140(95%ile)	<0.1mg/L (mean) <0.1mg/L (95%ile)
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status≤0.035(mean) or ≤0.075(95%ile)	<0.05mg/L (mean) <0.05mg/L (95%ile)
Specific pollutants Table 10	***Inland surface waters AA-EQS***	***Ambient sampling results***
Phenol	8	<0.1µg/L
Toulene	10	<1.0µg/L
Xylene	10	<1.0µg/L
Arsenic	25	<0.96µg/L
Total Chromium	8.1	<20.0µg/L
Copper (depending on water hardness)	5	<20.0µg/L
Cyanide	10	<5.0µg/L
Flouride	500	25.0µg/L
Zinc (depending on water hardness)	50	<20.0µg/L
Priority Substances Table 11	***Inland surface waters AA-EQS***	***Ambient sampling results***
Atrazine	0.6	<0.01µg/L
Dichloromethane	20	<1.0µg/L
Simazine	1	<0.01µg/L
Lead and its compounds	7.2	<20.0µg/L
Nickel and its compounds	20	<20.0µg/L
Priority Hazardous Substances Table 12	***Inland surface waters AA-EQS***	***Ambient sampling results***
Cadmium and its compounds (depending on water hardness)	≤0.08	<20µg/L
Mercury and its compounds	0.05	<0.2µg/L

Note the following:

The black results are within the EQR/S.
The red results break the EQR/S.
The blue results may break the EQR/S.
The results highlighted grey are at the limit of detection.
Water hardness in the River Sullane is 24.8mg $CaCO_3/L$

DOWNSTREAM COMPARISON TABLE
(ANALYSIS BELOW THE LIMIT OF DETECTION)

Physico-chemical conditions	***Ecological quality ratio/standard***	***2008 Downstream ambient sampling results at aSW01d***
	Good boundary	
	Rivers (All Types)	
Nutrient conditions Table 9	***River Water body***	***Ambient sampling results***
Total Ammonia (mg N/l)	Good status≤0.065(mean) or ≤0.140(95%ile)	0.023mg/L (mean) 0.0275mg/L (95%ile)
Molybdate Reactive Phosphorus (MRP) (mg P/l)	Good status≤0.035(mean) or ≤0.075(95%ile)	0.0095mg/L (mean) 0.0119mg/L (95%ile)
Specific pollutants Table 10	***Inland surface waters AA-EQS***	***Ambient sampling results***
Total Chromium	8.1	<1.0µg/L
Copper (depending on water hardness)	5	<1.0µg/L
Zinc (depending on water hardness)	50	<1.0µg/L
Priority Substances Table 11	***Inland surface waters AA-EQS***	***Ambient sampling results***
Lead and its compounds	7.2	6.0µg/L
Nickel and its compounds	20	<1.0µg/L
Priority Hazardous Substances Table 12	***Inland surface waters AA-EQS***	***Ambient sampling results***
Cadmium and its compounds (depending on water hardness)	≤0.08	<1.0µg/L

Note: Actual result for Cadmium in sample was zero but <1 is recorded for reporting purposes

PREDICTED IMPACTS

MASS BALANCE EQUATIONS FOR BOD:

Worst Case Scenario:

Maximum Discharge, Low Flow in the River, Maximum BOD in Discharge.

Flow of River (95%ile) = 0.447m3/sec
Mean BOD in River (upstream) = <1.0mg/L (Use 0.5mg/L for Calculation)
Max volume of discharge = 0.0125m3/sec
Max value for BOD in discharge = 274.0mg/L (2006-2008 Max from Outlet Table E4)

$$C_{final} = \frac{(0.447 \times 0.5) + (0.0125 \times 274.0)}{(0.447 + 0.0125)}$$

C_{final} = 7.94mg/l BOD

This is in breach of the 1.5 mg/L Mean and 2.6mg/L 95%ile EQS for BOD.

Normal Scenario:

Normal Discharge, Median Flow in the River, Mean BOD in Discharge.

Flow of River (Median) = 2.853m3/sec
Mean BOD in River (upstream) = <1.0mg/L (Use 0.5mg/L for Calculation)
Normal volume of discharge = 0.0042m3/sec
Mean value for BOD in discharge = 140.3mg/L (2006-2008 Mean from Outlet Table E4)

$$C_{final} = \frac{(2.853 \times 0.5) + (0.0042 \times 140.3)}{(2.853 + 0.0042)}$$

C_{final} = 0.71mg/l BOD

This is within the 1.5 mg/L Mean and 2.6mg/L 95%ile EQS for BOD.

MASS BALANCE EQUATIONS FOR AMMONIA:

Worst Case Scenario:

Maximum Discharge, Low Flow in the River, Maximum Ammonia in Discharge.

Flow of River (95%ile) = 0.447m3/sec
Mean Ammonia in River (upstream) = 0.045mg/L
Max volume of discharge = 0.0125m3/sec
Max value for Ammonia in discharge = 17.9mg/L (2008 Max from Outlet Table E4)

$$C_{final} = \frac{(0.447 \times 0.045) + (0.0125 \times 17.9)}{(0.447 + 0.0125)}$$

C_{final} = 0.53mg/l Ammonia

This is in breach of the 0.065mg/L Mean and 0.14mg/L 95%ile EQS for Ammonia.

Normal Scenario:

Normal Discharge, Median Flow in the River, Mean Ammonia in Discharge.

Flow of River (Median) = 2.853m3/sec
Mean Ammonia in River (upstream) = 0.045g/L

Normal volume of discharge = 0.0042m3/sec
Mean value for Ammonia in discharge = 9.57mg/L (2008 Mean from Outlet Table E4)

$$C_{final} = \frac{(2.853 \times 0.045) + (0.0042 \times 9.57)}{(2.853 + 0.0042)}$$

C_{final} = 0.059mg/l Ammonia

This is within the 0.065mg/L Mean and 0.14mg/L 95%ile EQS for Ammonia.

MASS BALANCE EQUATIONS FOR ORTHOPHOSPHATE:

Worst Case Scenario:

Maximum Discharge, Low Flow in the River, Maximum Orthophosphate in Discharge.

Flow of River (95%ile) = 0.447m3/sec
Mean Orthophosphate in River (upstream) = 0.0098mg/L
Max volume of discharge = 0.0125m3/sec
Max value for Orthophosphate in discharge = 1.6mg/L (2008 Max from Outlet Table E4)

$$C_{final} = \frac{(0.447 \times 0.0098) + (0.0125 \times 1.6)}{(0.447 + 0.0125)}$$

C_{final} = 0.053mg/l Orthophosphate

This is in breach of the 0.035mg/L Mean EQS. However this is within the 0.075mg/L 95%ile EQS for Orthophosphate.

Normal Scenario:

Normal Discharge, Median Flow in the River, Mean Orthophosphate in Discharge.

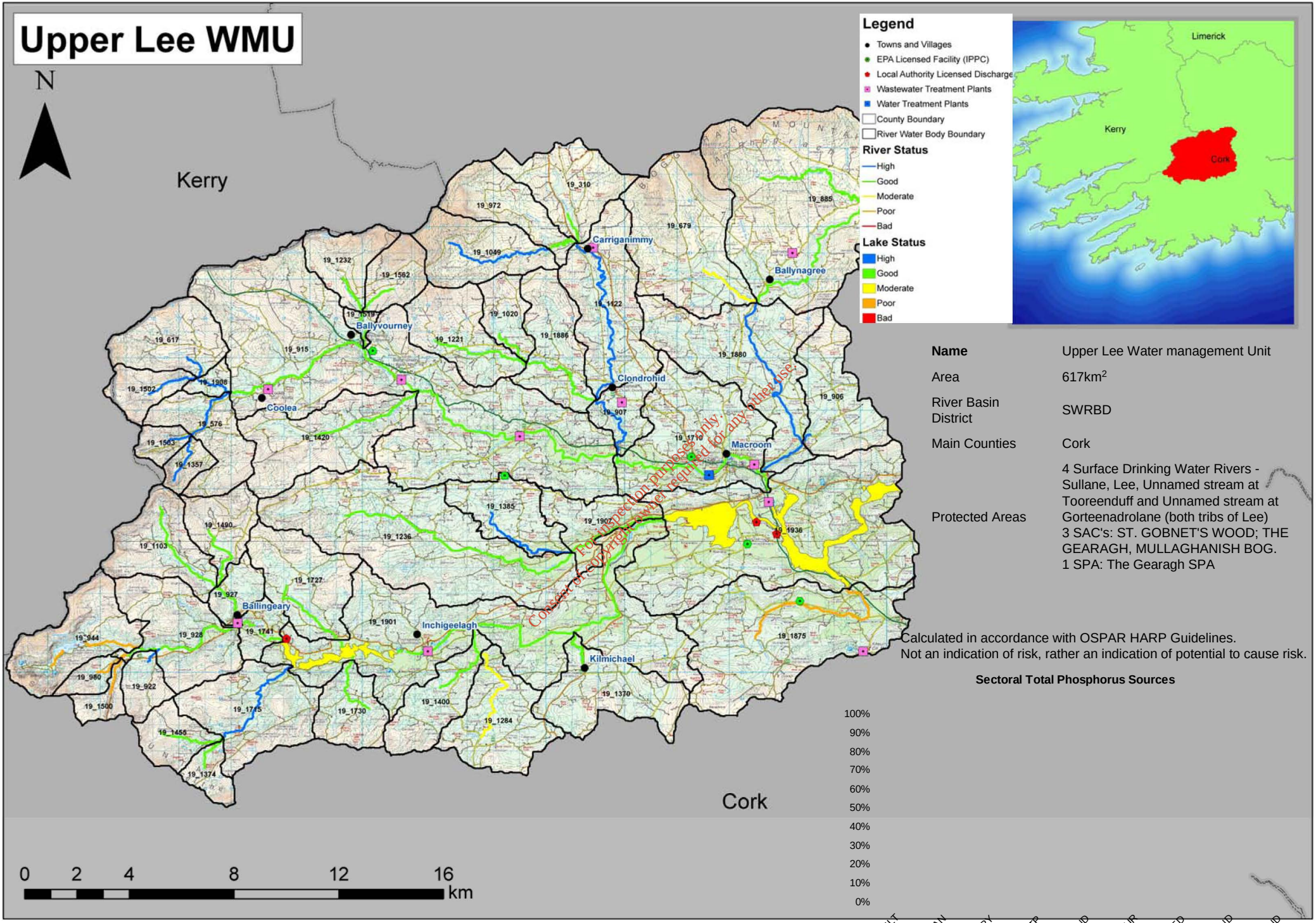
Flow of River (Median) = 2.853m3/sec
Mean Orthophosphate in River (upstream) = 0.0098mg/L
Normal volume of discharge = 0.0042m3/sec
Mean value for Orthophosphate in discharge = 0.81mg/L (2008 Mean from Outlet Table E4)

$$C_{final} = \frac{(2.853 \times 0.0098) + (0.0042 \times 0.81)}{(2.853 + 0.0042)}$$

C_{final} = 0.011mg/l Orthophosphate

This is within the 0.035mg/L Mean and 0.075mg/L 95%ile EQS for Orthophosphate

Upper Lee WMU



Legend

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

River Status

- High
- Good
- Moderate
- Poor
- Bad

Lake Status

- High
- Good
- Moderate
- Poor
- Bad

Name	Upper Lee Water management Unit
Area	617km^2
River Basin District	SWRBD
Main Counties	Cork
Protected Areas	4 Surface Drinking Water Rivers - Sullane, Lee, Unnamed stream at Tooreenduff and Unnamed stream at Gorteenadrolane (both tribs of Lee) 3 SAC's: ST. GOBNET'S WOOD; THE GEARAGH, MULLAGHANISH BOG. 1 SPA: The Gearagh SPA

Calculated in accordance with OSPAR HARP Guidelines.
Not an indication of risk, rather an indication of potential to cause risk.

Sectoral Total Phosphorus Sources

Upper Lee Water Management Unit Action Plan

STATUS/IMPACTS	
Overall status	There are 47 water bodies in this WMU. They are mostly High Status (14) with 27 Good Status, 2 Moderate status and 4 Poor status.
Status elements	Fish and hydromorphology dictates status of the poor waterbodies. Physchem is good or high, where monitored. High and Good water bodies are generally dictated by Q scores.
Possible Impacts - EPA Water Quality	LEE (CORK): SW_19_944; SW_19_928; SW_19_1901 2002 - EPA noted the protected pearl mussel has apparently become scarce in the river in the past two decades. 2005 - there was major disruption to fauna at first location, upstream of Gouganebarra Lake (0010), where salmonid parr and other age classes had been killed. The pH of the water was 10.66 on the day, outside the limit of tolerance for these fish, which resulted from concreting work on a small bridge upstream of the sampling site. 2008 - the site was assigned Q score 4-5 (high) - RECOVERY SW_19_944 Status of WB 2009: Moderate Status dictated by hydromorph SW_19_1901 Status of WB 2009: Good Status dictated by Q status SW_19_928 Status of WB 2009: Good Status dictated by Q status CUMMER SW_19_1875 2002 - The top and middle section of the river was polluted after having being high status in previous years. 2005 and 2008 - the water quality started to improve. The bottom section has remained at a good/high quality since records began. In 2002 and 2005 pollution was detected at the top section (site 0800). However the latest EPA data, collected in 2008, assigned site 0800 a Q score 4 (good). Status of WB 2009: Poor Status dictated by fishery status TOON: SW_19_1236; SW_19_1907 2002 - EPA found Toon river to be satisfactory throughout, for the first time since sampling began in 1990, when examined after flooding in September 2002. The pearl mussel still lives in part of the upper reaches. The lower reach, including the final location (0800), is hydromorphologically different than upstream following channelisation in the past 2005 - continuing satisfactory. SW_19_1236 Status of WB 2009: Good Status dictated by Q status SW_19_1907 Status of WB 2009: Good Status dictated by Q status LANEY: SW_19_885; SW_19_1800 2008 - Continuing satisfactory with high ecological quality at three of the site (0200, 0400, 0500) and good status a one site (0100). The top two sites surveyed (0100 and 0200) were assigned Q score 4 (good) whilst the bottom two sites were assigned Q score 4-5 (high). The protected pearl mussel lives in some stretches of the river. SW_19_885 Status of WB 2009: Good Status dictated by Q status SW_19_1800 Status of WB 2009: High Status dictated by Q status

STATUS/IMPACTS	
Possible Impacts - EPA Water Quality (CONTINUED)	SULLANE – SW_19_915; SW_19_1710 2002 - EPA noted the protected pearl mussel inhabits parts of the river. 2005 - EPA found the Sullane to be continuing satisfactory. A polluted stream enters the river, from right-hand side, downstream of Ballyvourney (0170). 2008 - All sites were assigned good status, except site 0300 which was classified Q score 4-5 (high). SW_19_915 Status of WB 2009: Good Status dictated by Q status, good fishery status and physchem status**** SW_19_1710 Status of WB 2009: Good Status dictated by Q score FOHERISH:SW_19_1049 ; SW_19_972;SW_19_1122; SW_19_907 All sites continue to be assigned Q score 4-5 (high). SW_19_1049 Status of WB: High Status dictated by Q status SW_19_972 Status of WB: High Status dictated by Q status SW_19_1122 Status of WB: High Status dictated by Q status SW_19_907 Status of WB: High Status dictated by Q status AWBOY - SW_19_679 Since records began the site has been assigned either good status or above. Status of WB 2009: Good Status dictated by Q score KEEL SW_19_310 Continuing satisfactory with good quality again recorded at the only location sampled on this tributary of the Foherish. Status of WB 2009: Good Status dictated by Q status DOUGLAS (SULLANE) - SW_19_1420 The Douglas (Sullane) has consistently attained good/high status. The lower site (0200) continuously has been assigned Q score 4, whilst the upper site (0700) has continuously been assigned Q score 4-5. Status of WB 2009: Good Status dictated by Q status GARRANE (LEE) SW_19_972 Since records began this site has been assigned Q score of 4 or 4-5 (good or high). Status of WB: High Status dictated by Q status CUSLOURA – SW_19_679 Consistently assigned Q score 4 (good) except in 2005 when it was assigned moderate status. This was due to the river becoming overgrown with emergent vegetation in July 2005. In 2008 EPA recorded a reverse in the quality and it was assigned Q score 4 again. Status of WB 2009: Good Status dictated by Q status

Upper Lee Water Management Unit Action Plan

PRESSURES/RISKS	
Nutrient sources	Most TP is diffuse (92%) of which 72% comes from agriculture, 9% from forestry and 7% from unsewered properties. 8% of TP comes from Urban and WWTP.
Point pressures	11 WWTP: - Ballinagree, Ballingeary, Ballymakera, Carranimmy, Clondrohid, Coolcower, Coolea, Inchigeela, Kilmurry, Kilnamartyra, Macroom U.D.C); 1 WTP (Macroom Pws); 4 Section 4 2 contaminated sites (Palfab Limited, Adhmaid Cill Na Martra Teoranta). 4 IPPC
Wastewater Treatment Plants (WWTP) and Industrial Discharges	Ballingeary - Insufficient existing capacity, evidence of impact, not a protected area Ballingeary - Insufficient existing assimilative capacity (BOD), evidence of impact, not a protected area Ballymakera WWTP - Insufficient existing capacity, evidence of impact, not a protected area Ballymakera WWTP - Insufficient existing assimilative capacity (BOD), evidence of impact, not a protected area Kilmurry - Insufficient future (2015) assimilative capacity (BOD), discharge not to a protected area Macroom U.D.C. WWTP - Insufficient existing capacity, non-compliant effluent standard Macroom U.D.C. WWTP - Insufficient existing capacity of treatment plant, no evidence of impact, not a protected area Macroom U.D.C. WWTP - Insufficient future (2015) assimilative capacity (BOD), discharge not to a protected area Inchigeela - Insufficient existing capacity, evidence of impact, not a protected area Inchigeela - Insufficient existing assimilative capacity (BOD), evidence of impact, not a protected area
Quarries, Mines & Landfills	3 quarries and 1 landfill. None at risk.
Agriculture	1 WB at risk - SW_19_1875 -Cummer and Buingea Rivers
On-site systems	There are 4499 septic tanks in this WMU. 1518 of these are located in areas of very high or extreme risk.
Forestry	10 WB at risk from acidification - SW_19_1400, SW_19_617, SW_19_1357, SW_19_1503, SW_19_576, SW_19_1374, SW_19_1049, SW_19_1500, SW_19_1730, SW_19_1727.
Dangerous substances	None at Risk
Morphology	1 WB at risk - SW_19_1936 - Water Regulation and Impoundments - Carrigdrohid Reservoir, which is designated as HMWB
Abstractions	None at risk
Other	

Future Pressures and Developments

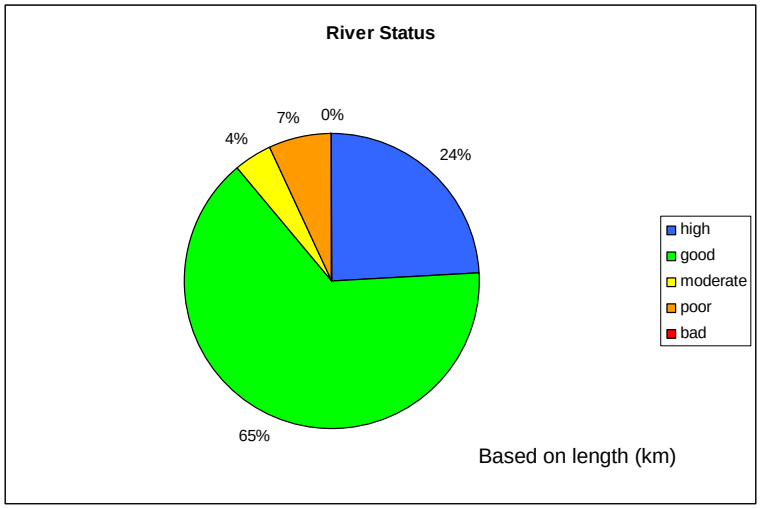
Throughout the river basin management cycle future pressures and developments will need to be managed to ensure compliance with the objectives of the Water Framework Directive and the Programme of Measures will need to be developed to ensure issues associated with these new pressures are addressed.

Upper Lee Water Management Unit Action Plan

SELECTED ACTION PROGRAMME *NB All relevant basic measures and general supplementary measures/surveys apply*	
Point Sources	Refer to point source table below for WWTP action programme Section 4s & IPPCs- Review Discharge Licenses
Diffuse Sources	AGRICULTURE - Good Agricultural Practice Regulations and Enforcement FORESTRY - Measures to address acidification apply to the 10 water bodies at risk in the WMU. These are generally located to the west and south west of the WMU. Septic Tanks: At Risk septic tanks are to be prioritised for inspections. Subsequent upgrade or connection to municipal systems depends on inspection and economic tests.
Other	Protection of drinking water, abstraction control and future licensing. MORPHOLOGY – Impassable barriers investigation.

Discharge		Measures							Waterbody	
Point Source Discharge	County	Plants Requiring Capital Works	Agglomerations Requiring Further Investigation Prior to Capital Works	Plants Required to Commence Implementation of Pollution Reduction Programmes for Shellfish Waters	Plants Requiring the Implementation of an Appropriate Performance Management System	Plants Requiring the Investigation of CSO's	Plants Required to Ensure Capacity of Treatment Plant is not Exceeded	Extended Timescale for Measure Implementation	Waterbody Code	Extended Deadline to Achieve Waterbody Objective
Ballingeary	Cork South	Yes						Yes	SW_19_927	No
Ballymakera WWTP	Cork South	Yes						Yes	SW_19_915	No
Inchigeela	Cork West	Yes						Yes	SW_19_1901	No
Kilmurry	Cork South						Yes	No	SW_19_1875	No
Macroom U.D.C. WWTP	Cork South	Yes					Yes	Yes	SW_19_1710	No

OBJECTIVES	
Good status 2015	Protect 41 waterbodies. Restore 3 waterbodies – by 2015
Alternative Objectives	Restore 1 waterbody by 2021 (SW_19_1875) – extended deadline for nitrogen losses to surface waters via groundwaters. Restore 1 waterbody by 2021 (SW_19_980) to allow recovery from poor/bad status Restore 1 waterbody (SW_19_1500) by 2027 for forestry.



Transitional Status – Refer to separate transitional waters action programme
Groundwater Status – Refer to separate groundwater action programme

Upper Lee Water Management Unit Action Plan - Rivers

IE_SW_UpperLee																		
			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 Polutants	Physio-chemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Drinking Water	Objective	Date objective to be achieved
SW_19_1020	N	SW_19_1221								G			Y			GES	2009
SW_19_1049	Y		H							H			Y			HES	2009
SW_19_1103	N	SW_19_1420								G						GES	2009
SW_19_1122	Y		H							H			Y			HES	2009
SW_19_1221	Y		G							G			Y			GES	2009
SW_19_1232	N	SW_19_915								G		Y	Y			GES	2009
SW_19_1236	Y		G				G			G						GES	2009
SW_19_1284	N	SW_20_250								M						GES	2015
SW_19_1357	N	SW_21_4731								H						HES	2009
SW_19_1370	N	SW_19_1710								G						GES	2009
SW_19_1374	N	SW_19_928								G						GES	2009
SW_19_1385	N	SW_19_907								H						HES	2009
SW_19_1400	N	SW_19_1236								G						GES	2009
SW_19_1420	Y		G							G						GES	2009
SW_19_1455	N	SW_19_928								G						GES	2009
SW_19_1490	N	SW_19_1420								G						GES	2009
SW_19_1500	N	SW_19_944								P						GES	2027
SW_19_1502	N	SW_21_4731								H						HES	2009
SW_19_1503	N	SW_21_4731								H						HES	2009
SW_19_1519	N	SW_19_915								G			Y			GES	2009
SW_19_1562	N	SW_19_915								G		Y	Y			GES	2009
SW_19_1710	Y		G				H		H	G					Y	GES	2009
SW_19_1715	N	SW_21_7068								H						HES	2009
SW_19_1727	N	SW_19_1420								G						GES	2009
SW_19_1730	N	SW_20_1491								G						GES	2009
SW_19_1741	N	SW_19_1420								G						GES	2009
SW_19_1875	Y		G		P				H	P						GES	2021

Upper Lee Water Management Unit Action Plan - Rivers

IE_SW_UpperLee																		
			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 Polutants	Physio-chemical	Ecological Status	Chemical Status	Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Drinking Water	Objective	Date objective to be achieved
SW_19_1880	Y		H							H			Y			HES	2009
SW_19_1886	Y		G							G			Y			GES	2009
SW_19_1901	Y		G						H	G		Y	Y			GES	2009
SW_19_1907	Y		G							G		Y	Y			GES	2009
SW_19_1908	N	SW_21_4731								H						HES	2009
SW_19_1936	Y								G	G		Y	Y			GES	2009
SW_19_310	Y		G							G			Y			GES	2009
SW_19_576	N	SW_21_4731								H						HES	2009
SW_19_617	N	SW_21_4731								H						HES	2009
SW_19_679	Y		M							M			Y			GES	2015
SW_19_885	Y		G							G			Y			GES	2009
SW_19_906	N	SW_19_1880								H						HES	2009
SW_19_907	Y		H							H						HES	2009
SW_19_915	Y		G		G				G	G		Y	Y			GES	2009
SW_19_922	N	SW_21_7068								H						HES	2009
SW_19_927	N	SW_19_1420								G						GES	2009
SW_19_928	Y		G						H	G						GES	2009
SW_19_944	Y		P				G			P						GES	2015
SW_19_972	Y		G							G			Y			GES	2009
SW_19_980	N	SW_19_944								P						GES	2021

Upper Lee Water Management Unit Action Plan - Lakes

IE_SW_UpperLee																		
			Biological Elements			Supporting Elements						Protected Areas						
Member State Code	Name	Monitored Y (Extrapolated N)	Macrophytes	Chlorophyll	Fish	Morphology	Nutrient Enrichment	Physico 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
SW_19_139	Carrigdrohid Reservoir	Y	M	G			G	G	M		Y	Y				GEP	2015
SW_19_4	Allua (Lough)	Y	M	M	M		G	G	M							GES	2015