











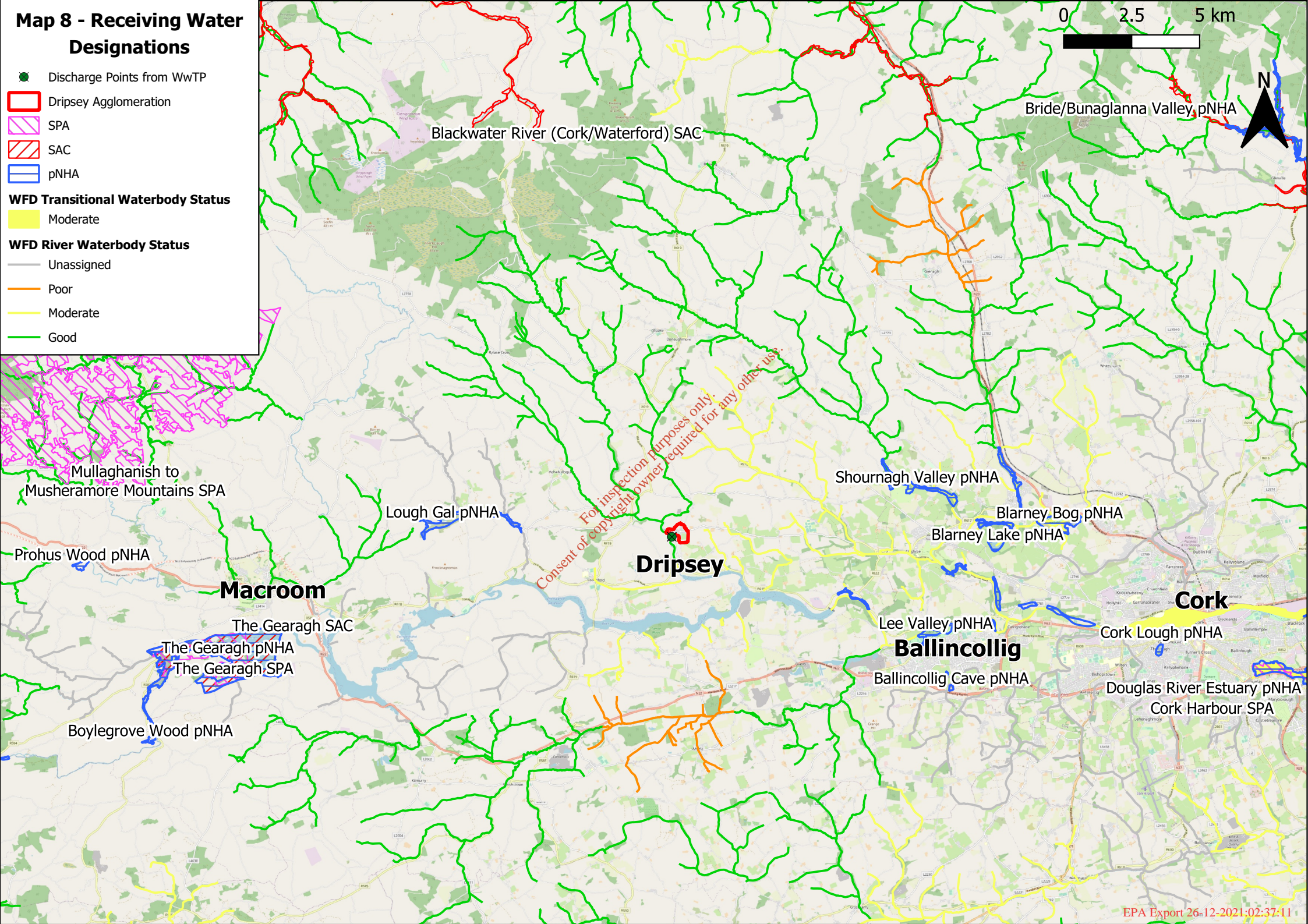


**D.1: Map 8 - Receiving Waters Designations**  
**D.2.1: Impact Assessment Report**  
**D.2.3: Waste Assimilative Capacity (WAC)**  
**D.2.4: Priority Substance Assessment Report**

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# Map 8 - Receiving Water Designations

-  Discharge Points from WwTP
  -  Dripsey Agglomeration
  -  SPA
  -  SAC
  -  pNHA
- WFD Transitional Waterbody Status**
-  Moderate
- WFD River Waterbody Status**
-  Unassigned
  -  Poor
  -  Moderate
  -  Good



## ATTACHMENT D.2.1: IMPACT ASSESSMENT REPORT

### 1. Introduction

This Report provides a summary of the Impact Assessments prepared to determine the impact of the discharges from the Dripsey agglomeration on the receiving waterbody, Dripsey River, and also addresses the criteria as outlined in **Section D.2** of the EPA guidance document.

### 2. Water Environment

Dripsey WwTP discharges to the Dripsey River (Dripsey\_020). Dripsey\_020 is within the Lee, Cork Harbour and Youghal Bay Catchment (Hydrometric Area 19). This catchment includes the area drained by the River Lee and all streams entering tidal water in Cork Harbour and Youghal Bay and between Knockaverry and Templebreedy Battery, Co. Cork, draining a total area of 2,153 km<sup>2</sup>.

The draft 3<sup>rd</sup> cycle Catchment Report (2021) for this hydrometric area, determined that for river waterbodies excess nutrients remain the most prevalent issue, along with morphology, organic pollution, and hydrology. Pressures identified affecting the greatest number of waterbodies within Hydrometric Area 19 include hydromorphology, followed by agriculture, urban run-off, urban wastewater, domestic waste water, forestry, mines and quarries and industry. Dripsey WwTP is not listed as a significant pressure in At Risk waterbodies in the 2<sup>nd</sup> or draft 3<sup>rd</sup> cycle catchment assessment. The Dripsey\_020 is not listed as an area for action under the 3<sup>rd</sup> cycle (or the 2<sup>nd</sup> cycle). The WFD status of the Dripsey\_020 is Good and At Risk. Significant pressures for the Dripsey\_020 have been determined, within the draft 3<sup>rd</sup> cycle Catchment Report, as Hydromorphology (overgrazing).

The EPA undertake biological monitoring of the Dripsey River at various locations. Upstream of the WwTP at RS19D060300 (ca. 2.8 km upstream), the 2020 monitoring reported a Q value of 4-5 (High Status, Unpolluted). Downstream of the WwTP at RS19D060400 (ca. 1 km downstream) the 2020 monitoring also reported a Q value of 4-5.

Recent ambient monitoring data (Jan 2019 - June 2021) for Dripsey\_020 (2019-2021) is shown in the Tables below.

**Table D.2.1** - Ambient Monitoring – Upstream of the Primary Discharge Location at RS19D060340 (Data Source: EDEN Compliance Jan 2019 - June 2021 Data)

Parameter	pH	BOD	Ortho-P (mg/l)	Total Ammonia (mg/l)	DO (mg/l)	DO (%sat)	Temp (°C)
Number of Samples	12	12	12	12	13	14	11
Max result	7.7	2.5	0.084	0.702	13.9	114	4.3
Min result	7.2	0.1	0.015	0.01	9.5	93	2.4

Parameter	pH	BOD	Ortho-P (mg/l)	Total Ammonia (mg/l)	DO (mg/l)	DO (%sat)	Temp (°C)
<b>Average result</b>	7.48	0.98	0.035	0.0784	11.07	99.9	3.5
<b>Mean EQS as per S.I. No. 77/2019</b> Good Status *		≤1.5	≤ 0.035	≤0.065			
<b>Mean EQS as per S.I. No. 77/2019</b> High Status *		≤1.3	≤ 0.025	≤0.04			
<b>Overall compliance with relevant EQS</b> Good Status *		Yes	Yes	No			
<b>Overall compliance with relevant EQS</b> High Status *		Yes	No	No			

\*Mean High & Good status under S.I. No. 77 of 2019

Note: Where data was reported as less than the limit of detection, LOD/2 was applied

**Table D.2.2 - Ambient Monitoring - Downstream of the Primary Discharge Location at RS19D060400 (Data Source: EDEN Compliance Jan 2019 - June 2021 Data)**

Parameter	pH	BOD	Ortho-P (mg/l)	Total Ammonia (mg/l)	DO (mg/l)	DO (%sat)	Temp (°C)
<b>Number of Samples</b>	12	12	12	12	13	13	11
<b>Max result</b>	8.1	2.6	0.101	0.289	13	115	4.9
<b>Min result</b>	7.4	0.5	0.012	0.01	9.6	95	2.6
<b>Average result</b>	7.70	1.00	0.041	0.0488	11.05	101.6	3.8
<b>Mean EQS as per S.I. No. 77/2019</b> Good Status *		≤1.5	≤ 0.035	≤0.065			
<b>Mean EQS as per S.I. No. 77/2019</b> High Status *		≤1.3	≤ 0.025	≤0.04			

Parameter	pH	BOD	Ortho-P (mg/l)	Total Ammonia (mg/l)	DO (mg/l)	DO (%sat)	Temp (°C)
<b>Overall compliance with relevant EQS Good Status *</b>		Yes	No	Yes			
<b>Overall compliance with relevant EQS High Status*</b>		Yes	No	No			

\*Mean High & Good status under S.I. No. 77 of 2019

Note: Where data was reported as less than the limit of detection, LOD/2 was applied

Based on ambient monitoring results upstream and downstream of the current discharge for the period between January 2019 to June 2021, the mean concentration for BOD is within the mean EQSs for Good and High status. In terms of Ortho-P, the mean concentration only meets the mean EQS for Good status upstream of the discharge. In terms of Ammonia, the mean concentration only meets the mean EQS for Good status downstream of the discharge.

It is worth noting that the Dripsey\_020 waterbody trends (at Drispey Br, downstream of the operational discharges) for Ortho-P and Total Ammonia for 2013-2018 are Downwards (decreasing concentrations). For 2013-2018, Ammonium and Ortho-P are noted as High status under the WFD.

### 3. Waste Assimilative Capacity Calculations

A WAC calculation was carried out by the EPA inspector in 2012 using Notional Clean River values and the design capacity of 600 p.e. (135m<sup>3</sup>/day). ELVs were set for BOD, Total Ammonia and Ortho-P in order to maintain the Good status of the Dripsey River as per the requirements of the European Communities Objectives (Surface Water) Regulations, 2009, as amended (now S.I. No. 77 of 2019). These limits came into effect from the 30<sup>th</sup> July 2012, as per D0426-01.

To inform the licence review, WAC calculations were completed using the ELVs as per D0426-01, the Notional Clean River background concentrations and the actual mean background concentrations based on January 2019 to June 2021 ambient monitoring data, and the EPA Flow Estimation of 0.4m<sup>3</sup>/s (Flow data confirmed by the EPA Hydrometric & Groundwater Section on the 12<sup>th</sup> November 2021).

For this calculation, due to the High status Objective (2027) for the Dripsey\_020, the High status EQSs for BOD, Total Ammonia and Ortho-P under S.I. No. 77 of 2019 were used, unlike the Good status EQSs which were used by the EPA in 2012.

It is important to reiterate again at this stage that the Dripsey WwTP is not listed as a significant pressure in At Risk waterbodies in the 2<sup>nd</sup> and draft 3<sup>rd</sup> cycle catchment assessments. The significant pressure for the Dripsey\_020 has been determined as Hydromorphology (overgrazing). The discharge from the Dripsey WwTP will not contribute to this significant pressure, and its resultant adverse effects on this waterbody.

It was important to determine if the discharge from the new Dripsey WwTP on its own is likely to cause a deterioration in the current status of the Dripsey\_020, or if the discharge

will impede the river achieving its High WFD status Objective by 2027. This was determined using the Notional Clean River approach.

When the notional clean background approach (*i.e.*, BOD 0.26mg/l, Total Ammonia 0.008mg/l & Ortho-P 0.005mg/l) was applied, the resultant downstream concentrations for BOD, Total Ammonia and Ortho-P comply with the relevant High status EQSs for each parameter (see **Table D.2.3**).

Based on the mean actual background concentrations, the WAC calculations shows that there would be sufficient assimilative capacity in the receiving water to receive flows and loads in terms of BOD. For both Ammonia and Ortho-P however, resultant concentrations of 0.117mg/l and 0.054mg/l respectively are predicted downstream, both of which are above the relevant High status EQSs (see **Table D.2.4**).

It is worth noting that in terms of the current Good status EQSs (current WFD status of the Dripsey\_020 waterbody), the resultants downstream concentrations for BOD, Total Ammonia and Ortho-P are well within the Good status EQSs based on the actual mean background concentrations (January 2019 to June 2021) (see **Table D.2.5**).

**Table D.2.3 - WAC for 600 p.e. – Notional Clean River Background & High Status EQSs**

Parameter	Notional Clean River Conc	ELV	Contribution from Primary Discharge (mg/l)	Predicted D/S Conc (mg/l)	Relevant Standard (mg/l) (High Status)
BOD	0.260	25	0.097	0.36	≤2.2 <sup>Note 1</sup>
Ortho-P (MRP)	0.005	5	0.019	0.024	≤0.045 <sup>Note 1</sup>
Total Ammonia	0.008	10	0.039	0.047	≤0.09 <sup>Note 1</sup>

**Note 1** European Union Environmental Objectives (Surface Waters) (Amendment). Regulations 2019 (S.I. No. 77 of 2019)

**Table D.2.4 - WAC for 600 p.e. - Mean Ambient Background (January 2019 to June 2021 Data) & High Status EQSs**

Parameter	Upstream River Conc <sup>Note 1</sup>	ELVs as per D0426-01	Contribution from Primary Discharge (mg/l)	Predicted D/S Conc (mg/l)	Relevant Standard (mg/l) (High Status)
BOD	0.975	25	0.097	1.072	≤2.2 <sup>Note 2</sup>
Ortho-P (MRP)	0.035	5	0.019	0.054	≤0.045 <sup>Note 2</sup>
Total Ammonia	0.078	10	0.039	0.117	≤0.09 <sup>Note 2</sup>

**Note 1:** Based on grab sampling carried out between 2019-2021.

**Note 2:** European Union Environmental Objectives (Surface Waters) (Amendment). Regulations 2019 (S.I. No. 77 of 2019)

**Table D.2.5 - WAC for 600 p.e. - Mean Ambient Background (January 2019 to June 2021 Data) & Good Status EQSs**

Parameter	Upstream River Conc <sup>Note 1</sup>	ELVs as per D0426-01	Contribution from Primary Discharge (mg/l)	Predicted D/S Conc (mg/l)	Relevant Standard (mg/l) (Good Status)
BOD	0.975	25	0.097	1.072	≤2.6 <sup>Note 1</sup>
Ortho-P (MRP)	0.035	5	0.019	0.054	≤0.075 <sup>Note 1</sup>
Total Ammonia	0.078	10	0.039	0.117	<0.14 <sup>Note 1</sup>

**Note 1:** Based on grab sampling carried out between 2019-2021.

**Note 2:** European Union Environmental Objectives (Surface Waters) (Amendment). Regulations 2019 (S.I. No. 77 of 2019)

In summary, based on the Notional Clean River approach, the ELVs as per D0426-01 will ensure that the discharge from the Dripsey WwTP contributes towards maintaining at least Good status of the Dripsey\_020 and contributes towards achieving its High WFD status Objective by 2027 in accordance with the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77 of 2019) and will ultimately ensure that there is no environmental risk posed to the receiving water environment as a result of the discharge from the new WwTP.

Refer to **Attachment D.2.3** for the WAC calculations.

#### 4. Appropriate Assessment Screening

An Appropriate Assessment (AA) screening of the operational discharges from the Dripsey WwTP was prepared to inform this WFDL review process (see **Attachment D.2.2**). It assessed whether the discharge activity (*i.e.*, Primary Discharge & SWOs from the new WwTP), alone or in combination with other plans and projects, are likely to have significant effects on a European Site(s) in view of best scientific knowledge and the conservation objectives of the site(s).

There are no European sites immediately downstream of the operational discharges. The nearest European site downstream is the Cork Harbour SPA which is located *ca.* 30 km downstream of the agglomeration. The Great Channel Island SAC is located *ca.* 34 km downstream. Due the distance of these sites from the operational discharges, and the large dilution capacity of the River Lee (of which the Dripsey River is a tributary), it is considered that there is no likelihood of significant effects from the operation discharges on the Qualifying Interests of these sites (including *ex-situ* species).

The nearest European sites to the agglomeration are The Gearagh SAC and The Gearagh SPA located *ca.* 26 km and 27 km upstream of the operational discharges on the River Lee (*i.e.*, upstream of the confluence with the River Dripsey). It is considered that no direct or indirect effects are likely on the species/habitats of The Gearagh SAC or The Gearagh SPA due to the sites distance upstream of the proposed operational discharges.

The screening assessment concluded that that the operational discharges from the new WwTP are not likely to have significant effects on any European Sites, for the following reasons:

- The Dripsey agglomeration is a small catchment area currently serving 420 p.e. with a maximum in this proposal of 600 p.e..
- The nearest downstream European site, is the Cork Harbour SPA which is ca. 30 km downstream of the proposed WwTP discharges
- The Dripsey WwTP and its primary effluent discharge (SW001) have been designed to meet the standards to satisfy all relevant regulatory requirements including the Surface Water Regulations (S.I. No. 77 of 2019) and the Urban Wastewater Treatment Regulations (S.I. No. 254 of 2001).
- The capacity of the receiving water to assimilate the discharges from the agglomeration.
- The design of the Storm Water Overflows (SW002 and SW003) in compliance with the definition of 'Storm Water Overflow' as per Regulation 3 of the Waste Water Discharge (Authorisation) Regulations, 2007, as amended and the criteria as set out in the DoEHLG 'Procedures and Criteria in Relation to Storm Water Overflows', 1995.
- Downstream of the WwTP at RS19D060400 (ca. 1 km downstream) a Q value of 4-5 has been reported since 2011.
- The Dripsey\_020 waterbody trends (at Dripsey Br, downstream of the operational discharges) for Ortho-P and Total Ammonia for 2013-2018 are Downwards (decreasing concentrations). For 2013-2018, Ammonium and Ortho-P are noted as High status under the WFD.

Based on the above, it has been concluded following screening that the operational discharges from the Dripsey agglomeration are not directly connected with or necessary to the management of any European Site and it is considered, for the reasons set out above, that it can be excluded, on the basis of objective information, that the operational discharges, individually or in combination with other plans or projects, will have a significant effect on any European Site and accordingly determined that an Appropriate Assessment is not required.

## 5. Priority Substance Assessment Report

An assessment of the potential for impacts on receiving waters from priority substances in the primary discharge has been carried out to inform this WWDL application. Estimated data from the PRTR reporting tool was used to inform this desktop assessment. The assessment considered the primary discharge relevant to Environmental Quality Standards (EQS) for priority substances in surface waters, as set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019).

It was concluded that none of the substances listed in the Specific Pollutants, Priority and Priority Hazardous Substances as outlined in the Surface Water Regulations, are likely to be present in the effluent discharge to the Dripsey River, at concentrations above the specified standards as per European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019).

This Report is contained in **Attachment D.2.4**: Priority Substance Assessment Report.



## 6. Shellfish Waters

There are no designated shellfish waters located in the downstream in the vicinity of the discharges.

## 7. Bathing Waters

There are no designated bathing waters on any of the receiving waters downstream of the WwTP.

## 8. River Flow Estimation

The 95%ile flow for the Dripsey WwTP receiving waterbody, Dripsey\_020, is 0.40 m<sup>3</sup>/s. This river flow was confirmed by the EPA Hydrometric & Groundwater Section on the 12<sup>th</sup> November 2021. Flow was calculated based on a number of spot flows taken at 19035 Dripsey Mills and compared against the flow duration curve at synchronous station 19001 Ballea (OPW).

## 9. Combined Approach

The Waste Water Discharge Authorisation under the European Union (Waste Water Discharge) Regulations 2007 to 2020, specify that a '*combined approach*' in relation to licensing of waste water works must be taken, whereby the emission limits for the discharge are established on the basis of the stricter of either or both, the limits and controls required under the Urban Waste Water Treatment Regulations, 2001, as amended, and the limits determined under statute or Directive for the purpose of achieving the environmental objectives established for surface waters, groundwater or protected areas for the water body into which the discharge is made.

The effluent standards for the new WwTP are in compliance with the WWDL D0426-01 ELVs and give effect to the principle of the Combined Approach as defined in Waste Water Discharge (Authorisation) Regulations, 2007 to 2020 in that they accommodate the Urban Waste Water Regulations and the relevant status/designations of the receiving waterbody, the Dripsey River.

## 10. Compliance with Relevant National or EU Legislation

As per **Attachment B.6**, the Dripsey WwTW have been designed to ensure that the emissions from the agglomeration will comply with, and will not result in the contravention of, EU Legislation and National Regulations.

The effluent discharge standards (*i.e.*, ELVs as per D0426-01: BOD 25mg/l, Total Ammonia 10mg/l and Ortho-P 5mg/l), the design of the overflows, along with the positive residual effects from the remedial network upgrade works, will ensure that the operational discharges from the agglomeration (i) contribute towards maintaining at least Good status of the Dripsey\_020, (ii) contribute towards achieving its High WFD status Objective by 2027 in accordance with the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77 of 2019) and (iii) will ensure that there is no environmental risk posed to the receiving water environment as a result of the discharges from the agglomeration.

Based on the above once fully commissioned, the new WwTP is expected to have a positive impact in terms of reduction in the levels of nutrients being discharged into the Dripsey

River. The discharge activities will not cause a deterioration in the chemical status in the relevant receiving waterbody and will not compromise the achievement of the objectives and EQSs established for any European sites (e.g., the Gearagh SAC, The Gearagh SPA, Cork Harbour SPA and Great Channel Island SAC) water dependant species and natural habitats, or any other designations.

## 11. Data Sources

The following data sources were used to complete this application.

- Online data available on held by the NPWS, the EPA, NIEA and Irish Water:
  - [www.npws.ie](http://www.npws.ie)
  - [epawebapp.epa.ie](http://epawebapp.epa.ie)
  - [gis.epa.ie/EPAMaps](http://gis.epa.ie/EPAMaps)
  - <https://gis.daera-ni.gov.uk/arcgis/apps/webappviewer/>
  - [catchments.ie](http://catchments.ie)
- GIS data for European site boundaries obtained in digital format online from European Environmental Agency
- Irish Water/Cork County Council Monitoring & Sampling Data

## 12. Cumulative and In Combination Effects

The Appropriate Assessment Screening Report addresses combination effects. Refer to **Attachments D.2.2.**

## 13. Mixing zone or transitional areas of exceedance

Based on the 95%ile River flow ( $0.40 \text{ m}^3/\text{s}$ ), and the Dripsey WwTP DWF ( $135 \text{ m}^3/\text{d}$ ), there are 256 dilutions estimated immediately in the proximity of the discharge point.

## 14. Dilutions and retention times for lakes

Not applicable. No discharges to lakes.

## 15. The impact of the discharges on any environmental media other than those into which the emissions are to be made

Not applicable. No other relevant media into which the emissions are to be made.

## 16. Groundwater Details

Not applicable. No discharge to ground waters.

## 17. High Status Waterbodies

No High Status waterbodies are downstream of the operational discharges. However, it should be noted that the Dripsey\_20 waterbody has High Status Objective (2027) under the WFD. See **Section 3 Waste Assimilative Capacity Calculations** above.

**18. Fresh Water Pearl Mussels**

Not applicable. No Fresh Water Pearl Mussels within the region of the Dripsey WwTW and/or the Discharge points (SW001, SW002 and SW003).

**19. For waste water treatment plants with coastal discharges, provide evidence that the end of the discharge pipe is below the mean spring tide low water line**

Not applicable. Discharge is not to coastal water.

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Waste Assimilative Capacity (WAC) Calculation

Calculation Sheet

Date	30/11/2021
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WWTP	Dripsey
Name of River	Dripsey River

		Data Source	m <sup>3</sup> /d
95% ile Flow	0.400	Data from EPA Hydrometric & Groundwater Section: Flow calculated based on a number of spot flows taken at 19035 Dripsey Mills & and compared against the flow duration curve at synchronous station 19001 Ballea (OPW)	34,560

Proposed Operational Standard	mg/l
Carbonaceous BOD	25.000
Ammonia	10.000
Ortho-Phosphate (OP)	5.000

Average Background Concentration (Notional)		Average Background Concentration (Actual)					
Parameter	mg/l	Data Source	mg/l	Data Source			
Carbonaceous BOD	0.260	EPA Notionally Clean	0.975	Dripsey Castle Bridge - RS19D060340 (EPA Station)	Mean Data: 2019-2021		
Ammonia	0.008	EPA Notionally Clean	0.078				
Ortho-Phosphate (OP)	0.005	EPA Notionally Clean	0.035				
Allowable Downstream Concentration (Surface Water Regulations) - GOOD STATUS							
Parameter	95% ile mg/l	Data Ref					
Carbonaceous BOD	2.60	Surface Water Regs (S.I. No. 77 of 2019) GOOD Status EQS's					
Ammonia	0.14						
Ortho-Phosphate (OP)	0.075						
PE	WWTP Daily Flow (DWF)	Allowable effluent conc (Notionally Clean)			Allowable effluent conc (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m <sup>3</sup> /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	601.64	33.93	18.00	418.60	144.99	2,614.11
PE	WWTP Daily Flow (DWF)	WAC (Notionally Clean)			WAC (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m <sup>3</sup> /d	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d
600	135	81.22	4.58	2.43	56.51	19.57	352.90
PE	WWTP Daily Flow (DWF)	Resultant Concentration (Notionally Clean)			Resultant Concentration (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m <sup>3</sup> /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	0.36	0.047	0.024	1.072	0.117	0.054
		Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable

Waste Assimilative Capacity (WAC) Calculation

Calculation Sheet

Date	20/12/2021
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WWTP	Dripsey
Name of River	Dripsey River

		Data Source	m <sup>3</sup> /d
95% ile Flow	0.400	Data from EPA Hydrometric & Groundwater Section: Flow calculated based on a number of spot flows taken at 19035 Dripsey Mills & and compared against the flow duration curve at synchronous station 19001 Ballea (OPW)	34,560

Proposed Operational Standard	mg/l
Carbonaceous BOD	25.000
Ammonia	10.000
Ortho-Phosphate (OP)	5.000

Average Background Concentration (Notional)			Average Background Concentration (Actual)				
Parameter	mg/l	Data Source	mg/l	Data Source			
Carbonaceous BOD	0.260	EPA Notionally Clean	0.975	Dripsey Castle Bridge - RS19D060340 (EPA Station)	Mean Data: 2019-2021		
Ammonia	0.008	EPA Notionally Clean	0.078				
Ortho-Phosphate (OP)	0.005	EPA Notionally Clean	0.035				
Allowable Downstream Concentration (Surface Water Regulations) - HIGH STATUS							
Parameter	95% ile mg/l	Data Ref					
Carbonaceous BOD	2.20	Surface Water Regs (S.I. No. 77 of 2019) HIGH Status EQS's					
Ammonia	0.09						
Ortho-Phosphate (OP)	0.045						
PE	WWTP Daily Flow (DWF)	Allowable effluent conc (Notionally Clean)			Allowable effluent conc (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m <sup>3</sup> /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	498.84	21.08	10.29	315.80	147.08	3,550.60
PE	WWTP Daily Flow (DWF)	WAC (Notionally Clean)			WAC (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m <sup>3</sup> /d	kg/d	kg/d	kg/d	kg/d	kg/d	kg/d
600	135	67.34	2.85	1.39	42.63	19.86	479.33
PE	WWTP Daily Flow (DWF)	Resultant Concentration (Notionally Clean)			Resultant Concentration (Actual)		
		BOD	NH	OP	BOD	NH	OP
	m <sup>3</sup> /d	mg/l	mg/l	mg/l	mg/l	mg/l	mg/l
600	135	0.36	0.047	0.024	1.072	0.117	0.054
		Acceptable	Acceptable	Acceptable	Acceptable	Too High	Too High

# Priority Substances Assessment

<b>Agglomeration Name:</b>	<b>Dripsey</b>
<b>Licence Register No.</b>	<b>D0426 Licence Review</b>

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### Appendix 1 – Screening of Parameters for Priority Substances

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## 1 Introduction

This report has been prepared for the Dripsey agglomeration, in County Cork, to inform a Waste Water Discharge Licence Review Application for D0426-01.

Dripsey is a settlement located approximately 19 km west of Cork city and 1 km north of the River Lee at the Inniscarra Lake Reservoir. The settlement consists of three nodes of development namely; Model Village, Upper Dripsey and Lower Dripsey but only the Model Village is serviced by a public sewer.

The new Waste Water Treatment Plant located at NGR 148619E, 074844N with a design capacity of 600 p.e, will provide secondary treatment to waste water generated within the Dripsey agglomeration. The core treatment process consists of an inlet stormwater overflow chamber, preliminary treatment (screening & grit removal), storm water storage followed by primary settlement, secondary biological treatment using a Rotating Biological Reactor (RBC) and a final settlement tank. Treated effluent will discharge to the Dripsey River (SW1) via a new outfall at 148611E, 074819N. The Dripsey River is a tributary of the River Lee which flows into Cork Harbour.

The source of wastewater in the Dripsey agglomeration is largely domestic. This desk top study has been undertaken to determine the necessity, if any, for further analysis of the discharge based on the *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*, issued by the EPA. Relevant inputs to the Dripsey WwTP and estimates for the emissions from the discharge point have been taken into account in the preparation of this report.

### 1.1 Assessment of Analysis Required

#### A. Review of all industrial inputs into WwTP

A review of available online mapping and EPA licensed facilities was undertaken to determine the non-domestic discharge types being received at the Dripsey WwTP. In addition, all planning applications, since 2017, were reviewed to determine the associated non-domestic discharges being sent to the Dripsey WwTP. The IW Technical Assessment Manual Sectoral Profile Data was reviewed to determine the potential dangerous substances which could be released to sewer from industrial inputs.

As per the EPA, IPC and IE database, there are currently no industrial premises with an IPC licence within the agglomeration.

There are no trade effluent licences under Section 16 of the Water Pollution Act 1977 (amended 1990) within the agglomeration.

It is considered that the Priority Substances which are possibly being emitted to sewer have been well represented in this partial characterisation of the wastewater (**Table 2.1**).

Upon review of the types of businesses, amenities and educational facilities in Dripsey, there are currently no known non-domestic effluent discharges of note with potential dangerous/priority substances being discharged to the sewer.



## **B. Discharge monitoring**

No primary discharge monitoring for the possible presence of Specific Pollutants, Priority and Priority Hazardous Substances as outlined in Table 10, 11 and 12 of European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019) is available for this agglomeration.

## **C. Downstream monitoring location's participation in relevant monitoring programme**

There is recent no priority substances monitoring data for the downstream ambient monitoring location, Dripsey River.

## **D. Participation in PRTR reporting**

Estimated data from the PRTR reporting tool was required for this desktop assessment as measured data was unavailable for all parameters in Appendix 1.

### **1.2 Review Outcome of Desktop Study**

Following the desktop study, all parameters in Appendix 1 have been assessed to establish any potential impact on the receiving waters. Priority substance measured concentrations in the primary discharge were not available for any parameters, as such estimated concentrations were assessed. This desktop study is considered to provide partial characterisation of the wastewater.

## **2 Assessment of Significance and Recommendations**

An assessment of the potential for impacts on receiving waters from priority substances in the primary discharge has been carried out. The assessment considers the primary discharge relevant to Environmental Quality Standards (EQS) for priority substances in surface waters, as set out in the European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019).

Based on the estimated data, no parameters were identified as potentially being higher than the required EQS.

<b>Does the assessment use the Desk Top Study Method or Screening Analysis to determine if the discharge contains the parameters in Appendix 1 of the EPA guidance</b>	Desk Top Study
<b>Does the assessment include a review of licensed / authorised inputs to the works?</b>	Yes
<b>Does the assessment include a review of other (unauthorised) inputs to the works?</b>	Yes
<b>Does the report include an assessment of the significance of the results where a listed material is present in the discharge? (e.g. impact on the relevant EQS standard for the receiving water)</b>	Yes

Does the assessment identify that priority substances may be impacting the receiving water?	No
Does the Improvement Programme for the agglomeration include the elimination / reduction of all priority substances identified as having an impact on receiving water quality?	N/A

### 3 Conclusion

Based on the analysis of the estimated final effluent discharged from the Dripsey WwTP, and the fact that there are no known non-domestic significant discharges in the agglomeration, it is concluded that none of the substances listed in the Specific Pollutants, Priority and Priority Hazardous Substances as outlined in the Surface Water Regulations, are likely to be present in the effluent discharge to the Dripsey River, at concentrations above the specified standards as per European Communities Environmental Objectives (Surface Waters) Regulations 2009, as amended (now S.I No. 77 of 2019).

Based on the results of this desk top study, it can be determined that **no for further analysis** of the discharge, based on the *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*, issued by the EPA, is required.

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## Appendix 1 – Screening of Parameters for Priority Substances

AA: Annual Average

MAC: Maximum Allowable Concentration

EQS: Environmental Quality Standards

Dilution factor in receiving water: 256 dilutions estimated immediately in the proximity of the discharge point (based on the Dripsey River 95%ile flow 0.40 m<sup>3</sup>/s and DWF 135 m<sup>3</sup>/d)

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) <sup>1</sup>	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
1	Benzene	VOCs	10	8	0.00000	PRTR Electronic Toolset	N/A	No	No
2	Carbon tetrachloride	VOCs	12	12	0.00000	PRTR Electronic Toolset	N/A	No	No
3	1,2-Dichloroethane	VOCs	10	10	0.00000	PRTR Electronic Toolset	N/A	No	No
4	Dichloromethane	VOCs	20	20	0.00000	PRTR Electronic Toolset	N/A	No	No
5	Tetrachloroethylene	VOCs	10	10	0.00000	PRTR Electronic Toolset	N/A	No	No
6	Trichloroethylene	VOCs	10	10	0.00000	PRTR Electronic Toolset	N/A	No	No
7	Trichlorobenzenes	VOCs	0.4	0.4	0.00000	PRTR Electronic Toolset	N/A	No	No
8	Trichloromethane	VOCs	2.5	2.5	0.00000	PRTR Electronic Toolset	N/A	No	No
9	Xylenes (all isomers)	VOCs	10	10	0.00000	PRTR Electronic Toolset	N/A	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) <sup>1</sup>	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
10	Ethyl Benzene	VOCs	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
11	Toluene	VOCs	10	10	0.00001	PRTR Electronic Toolset	N/A	No	No
12	Naphthlene <sup>1</sup>	PAHs	2	2	0.00000	PRTR Electronic Toolset	N/A	No	No
13	Fluoranthene <sup>1</sup>	PAHs	0.0063	0.0063	0.00000	PRTR Electronic Toolset	N/A	No	No
14	Benzo[k]fluoranthene <sup>2</sup>	PAHs	MAC of 0.017	MAC of 0.017	0.00000	PRTR Electronic Toolset	N/A	No	No
15	Benzo[ghi]perylene <sup>2</sup>	PAHs	MAC of 8.2 x 10 <sup>-3</sup>	MAC of 8.2 x 10 <sup>-4</sup>	0.00000	PRTR Electronic Toolset	N/A	No	No
16	Indeno[1,2,3-c,d]pyrene <sup>2</sup>	PAHs			0.00000	PRTR Electronic Toolset	N/A	No	No
17	Benzo[b]fluoranthene <sup>2</sup>	PAHs	MAC of 0.017	MAC of 0.017	0.00000	PRTR Electronic Toolset	N/A	No	No
18	Benzo[a]pyrene	PAHs	1.7 x 10 <sup>-4</sup>	1.7 x 10 <sup>-4</sup>	0.00000	PRTR Electronic Toolset	N/A	No	No
19	Di(2-ethylhexyl)phthalate (DEHP)	Plasticiser	1.3	1.3	0.00000	PRTR Electronic Toolset	N/A	No	No
20	Isodrin <sup>3</sup>	Pesticides	Σ=0.01	Σ=0.005	0.00000	PRTR Electronic Toolset	N/A	No	No

<sup>1</sup> The EQS for these substances shall take effect from 22 December 2015

<sup>2</sup> No indicative parameter is provided for this group of substances

<sup>3</sup> Σ of Aldrin, Dieldrin, Endrin and Isodrin.

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) <sup>1</sup>	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
21	Dieldrin <sup>3</sup>	Pesticides			0.00000	PRTR Electronic Toolset	N/A	No	No
22	Diuron	Pesticides	0.2	0.2	0.00000	PRTR Electronic Toolset	N/A	No	No
23	Isoproturon	Pesticides	0.3	0.3	0.00000	PRTR Electronic Toolset	N/A	No	No
24	Atrazine	Pesticides	0.6	0.6	0.00000	PRTR Electronic Toolset	N/A	No	No
25	Simazine	Pesticides	1	1	0.00000	PRTR Electronic Toolset	N/A	No	No
26	Glyphosate	Pesticides	60	-	0.00000	PRTR Electronic Toolset	N/A	No	No
27	Mecoprop	Pesticides	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
28	2,4-D	Pesticides	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
29	MCPA	Pesticides	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
30	Linuron	Pesticides	0.7	0.7	0.00000	PRTR Electronic Toolset	N/A	No	No
31	Dichlobenil	Pesticides	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
32	2,6-Dichlorobenzamide	Pesticides	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
33	PCBs	PCBs	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) <sup>1</sup>	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
34	Phenols (as Total C)	Phenols	8	8	0.00008	PRTR Electronic Toolset	N/A	No	No
35	Lead	Metals	1.2	1.3	0.00001	PRTR Electronic Toolset	N/A	No	No
36	Arsenic	Metals	25	20	0.00000	PRTR Electronic Toolset	N/A	No	No
37	Copper	Metals	5 or 30 <sup>2</sup>	5	0.00001	PRTR Electronic Toolset	N/A	No	No
38	Zinc	Metals	8 or 50 or 100 <sup>3</sup>	40	0.00012	PRTR Electronic Toolset	N/A	No	No
39	Cadmium	Metals	0.08 or 0.09 or 0.15 or 0.25 <sup>4</sup>	0.2	0.00000	PRTR Electronic Toolset	N/A	No	No
40	Mercury	Metals	MAC of 0.07	MAC of 0.07	0.00000	PRTR Electronic Toolset	N/A	No	No
41	Chromium VI	Metals	3.4	0.6	0.00000	PRTR Electronic Toolset	N/A	No	No
42	Selenium	Metals	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
43	Antimony	Metals	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
44	Molybdenum	Metals	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
45	Tin	Metals	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) <sup>1</sup>	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
46	Barium	Metals	n/a	n/a	0.00004	PRTR Electronic Toolset	N/A	N/A	N/A
47	Boron	Metals	n/a	n/a	0.00009	PRTR Electronic Toolset	N/A	N/A	N/A
48	Cobalt	Metals	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
49	Vanadium	Metals	n/a	n/a	0.00001	PRTR Electronic Toolset	N/A	N/A	N/A
50	Nickel	Metals	4	8.6	0.00000	PRTR Electronic Toolset	N/A	No	No
51	Fluoride	General	500	1,500	0.00022	PRTR Electronic Toolset	N/A	No	No
52	Chloride	General	n/a	n/a	0.06480	PRTR Electronic Toolset	N/A	N/A	N/A
53	TOC	General	n/a	n/a	0.01310	PRTR Electronic Toolset	N/A	N/A	N/A
54	Cyanide	General	10	10	0.00000	PRTR Electronic Toolset	N/A	No	No
	Conductivity	General	n/a	n/a	0.00000	PRTR Electronic Toolset	N/A	N/A	N/A
	Hardness (mg/l CaCO <sub>3</sub> )	General	n/a	n/a	0.29100	PRTR Electronic Toolset	N/A	N/A	N/A
	pH	General	n/a	n/a	-	PRTR Electronic Toolset	N/A	N/A	N/A

Notes:

1. Where measured values are available these should be used instead of estimated values from PRTR tool.
2. In the case of Copper, the value 5 applies where the water hardness measured in mg/l CaCO<sub>3</sub> is less than or equal to 100; the value 30 applies where the water hardness exceeds 100 mg/l CaCO<sub>3</sub>. Estimated CaCO<sub>3</sub> value > 100 where no sampling data available (based on PRTR tool)
3. In the case of Zinc, the standard shall be 8 µg/l for water hardness with annual average values less than or equal to 10 mg/l CaCO<sub>3</sub>, 50 µg/l for water hardness greater than 10 mg/l CaCO<sub>3</sub> and less than or equal to 100 mg/l CaCO<sub>3</sub> and 100 µg/l elsewhere. Estimated CaCO<sub>3</sub> value > 100 where no sampling data available
4. For Cadmium and its compounds the EQS values vary dependent upon the hardness of the water as specified in five class categories (Class 1: <40 mg CaCO<sub>3</sub>/l, Class 2: 40 to <50 mg CaCO<sub>3</sub>/l, Class 3: 50 to <100 mg CaCO<sub>3</sub>/l, Class 4: 100 to <200 mg CaCO<sub>3</sub>/l and Class 5: >200 mg CaCO<sub>3</sub>/l)

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