



ATTACHMENT D1 & D.2:

IMPACT ASSESSMENT










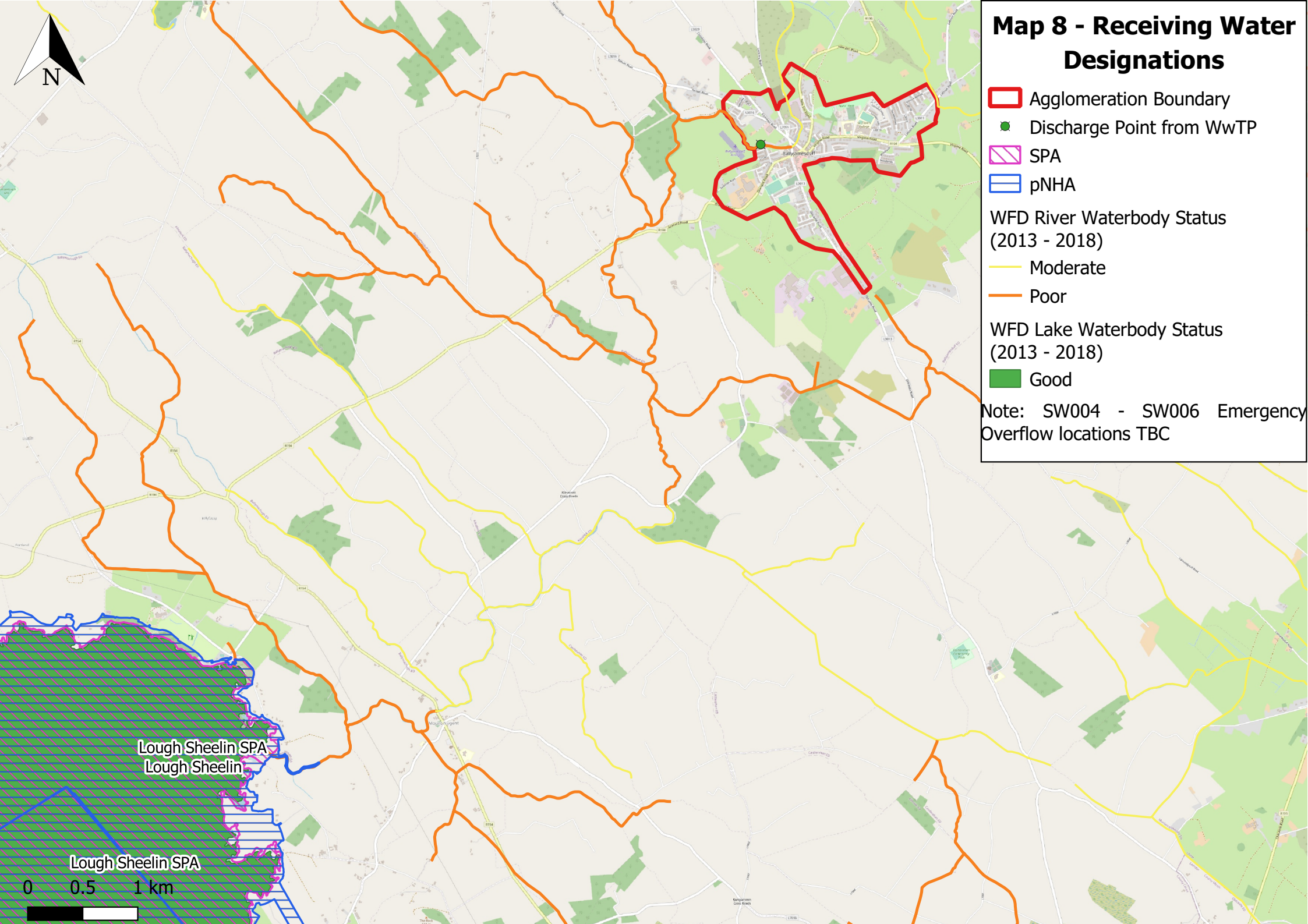
ATTACHMENT D.1:

MAP 8 - RECEIVING WATER DESIGNATIONS



Map 8 - Receiving Water Designations

-  Agglomeration Boundary
 -  Discharge Point from WwTP
 -  SPA
 -  pNHA
- WFD River Waterbody Status (2013 - 2018)
-  Moderate
 -  Poor
- WFD Lake Waterbody Status (2013 - 2018)
-  Good
- Note: SW004 - SW006 Emergency Overflow locations TBC



Lough Sheelin SPA
Lough Sheelin

Lough Sheelin SPA

0 0.5 1 km



ATTACHMENT D.2.1:

**IMPACT ASSESSMENT REPORT,
DECEMBER 2022**

ATTACHMENT D.2.1: IMPACT ASSESSMENT REPORT – NOVEMBER 2022

1. Introduction

This Report provides a summary of the Impact Assessments prepared to determine the impact of the discharges from the Ballyjamesduff agglomeration on the receiving waterbody, the Mountnugent_020 River, and also addresses the criteria as outlined in **Section D.2** of the EPA guidance document.

2. Water Environment

The receiving water of the operational discharges from the Ballyjamesduff WwTP is the Mountnugent_020 (Pound Stream).

Mountnugent_020 is within the Upper Shannon Catchment (Hydrometric Area 26F). This catchment covers an area of 1,229km² and is characterised by a southwestern region of flat, boggy land, an eastern region containing swarms of isolated relatively steep-sided hills and a northern section composed of more undulating topography entering the southern part of the drumlin belt

The draft 3rd Cycle Catchment Report (2021) for this hydrometric area, determined that for river waterbodies excess nutrients and morphological impacts are the most prevalent issues in the Upper Shannon catchment. The Ballyjamesduff agglomeration is currently listed as a significant pressure on the At Risk Mountnugent_020 in the draft 3rd cycle catchment assessment. The Mountnugent_020 is listed as an area for restoration under the 3rd cycle.

The WFD status of the Mountnugent_020 is Poor and At Risk. The significant pressure for the Mountnugent_020 has been determined, within the draft 3rd Cycle Catchment Report, as Agriculture and Urban Waste Water. Downstream the Mountnugent_030 (*ca.* 2.5km downstream of the WwTP) is currently classed as Moderate (2013-2018 & 2016-2021). The Mountnugent_040 from the Bridge E of Killanacrott House, the current status is Moderate for *ca.* 4km downstream to Mountnugent Bridge where the Mountnugent River joins the River Inny (Inny_040). The River Inny from the Mountnugent Bridge downstream to Lough Sheelin (*ca.* 2.5km) is currently classed as Moderate status (2016-2021). This was previously Poor status (WFD 2013-2018). The Lake Waterbody 2013-2018 WFD status was Good status, however for the recently published 2016-2021 assessment period, the WFD status is Moderate (previously also Moderate status for the 2010-2015 assessment period).

The Mountnugent_020 waterbody trends (Bridge to SE of Rockville, downstream of the operational discharges) for Ortho-P for 2013-2018 is Downwards (decreasing concentrations). For 2013-2018, Ortho-P is noted as Moderate status under the WFD. The waterbody trend for Ammonium for 2013-2018 are Upwards (increasing concentrations). For 2013-2018, Ammonium is noted as Moderate status under the WFD. The ecological status of the waterbody is Poor. Trends are currently not available for the 2016-2021 assessment period.

The Mountnugent_020 waterbody trends (Bridge to SE of Rockville, downstream of the operational discharges) for Ortho-P for 2013-2018 is Downwards (decreasing concentrations). For 2013-2018, Ortho-P is noted as Moderate status under the WFD. The waterbody trend for Ammonium for 2013-2018 are Upwards (increasing concentrations). For 2013-2018, Ammonium is noted as Moderate status under the WFD. The ecological status of the waterbody is Poor.

The EPA undertake monitoring of the Mountnugent River both upstream and downstream of the WwTP (RS26M020100 and RS26M020120, respectively). The latest Q-Value rating available upstream of the WwTP (ca. 270m) is from 1987 and which reported a Q value of 3-4 (Moderate Status). Downstream of the WwTP at RS26M020120 (ca. 540m downstream of the WwTP) a Q value of 2-3 (Poor Status) has been reported since 2017. A further ca. 2km downstream at RS26M020200 a Q value of 3-4 (Moderate Status) has been reported since 2017. At Station RS26M020500 at Mountnugent Bridge (a further ca. 7km downstream), a Q value of 4 (Good Status) has been reported since 2017.

Based on Irish Water’s compliance ambient monitoring sampling March 2020 – August 2022 at RS26M020100 (ca. 275 km upstream of WwTP primary discharge), the mean and 95%ile EQS for Good status is not meet for BOD and Ortho-P. In terms of Ammonia, a mean concentration of 0.98mg/l was recorded, therefore indicating that only the 95%ile EQS for Good status is met. In terms of the downstream ambient point, RS26M020120 (ca. 540 km downstream of WwTP primary discharge), for the period of March 2020 – July 2022, the mean and 95%ile EQSs for Good status are not meet for BOD, Ortho-P and Ammonia.

Table D.2.1 - Ambient Monitoring – Upstream at RS26M020100 Irish Water Compliance Data from March 2020 – August 2022)

Parameter	pH (pH Unit)	BOD (mg/l)	Ortho-phosphate (mg/l)	Total Ammonia (mg/l)	DO (mg/l)	TSS (mg/l)	Temperature (°C)
Number of Samples	12	12	12	12	9	11	9
Max result	7.5	10.9	0.389	5.2	118.5	14	14.8
Min result	6.6	0.7	0.010	0.009	45.5	3.5	4.5
Average result	7.1	3.0	0.078	0.980	71.4	5.1	10.5
Mean EQS as per S.I. No. 77/2019 Good Status	6-9	≤1.5	≤ 0.035	≤0.065			
95%ile EQS as per S.I. No. 77/2019 Good Status	6-9	≤2.6	≤ 0.075	≤0.14			
Overall compliance with relevant Mean EQS Good Status	Yes	No	No	No			
Overall compliance with relevant 95%ile EQS Good Status	Yes	No	No	Yes			

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

Table D.2.2 - Ambient Monitoring – Downstream at RS26M020120 (Source: Irish Water Compliance Data from March 2020 – July 2022)

Parameter	pH (pH Unit)	BOD (mg/l)	Ortho- phosphate (mg/l)	Total Ammonia (mg/l)	DO (mg/l)	TSS (mg/l)	Temperature (°C)
Number of Samples	11	11	11	11	9	10	8
Max result	7.7	28.3	0.42	14.8	120	40	15.8
Min result	6.9	1.1	0.03	0.05	46.1	3.5	5.2
Average result	7.3	5.4	0.14	3.07	87.4	8.8	10.7
Mean EQS as per S.I. No. 77/2019 Good Status	6-9	≤1.5	≤ 0.035	≤0.065			
95%ile EQS as per S.I. No. 77/2019 Good Status	6-9	≤2.6	≤ 0.075	≤0.14			
Overall compliance with relevant Mean EQS Good Status	Yes	No	No	No			
Overall compliance with relevant 95%ile EQS Good Status	Yes	No	No	No			

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

Based on the 2021 AER, and the above compliance results above, the current WwTP is likely currently contributing to a deterioration in the quality of the Mountnugent_020. However, it is important to note that the upgrade to the Ballyjamesduff WwTP and associated ELVs will ensure that the operational discharges from the WwTP contribute towards assisting the Mountnugent_020 in achieving Good status by 2027 and will ensure that there is no environmental risk posed to the receiving water environment as a result of the WwTPs operational discharges.

There are no drinking water abstraction points downstream in the vicinity of the waste water discharge points. The nearest abstraction point is at Lough Kinale water ca. 22km d/s.

There are no designated or protected areas (e.g., bathing waters, shellfish waters, nutrient sensitive areas, or Freshwater Pearl Mussel (*Margaritifera Margaritifera*) catchments) in proximity to the Ballyjamesduff agglomeration, or downstream within a zone the impact of its operational discharges.

In terms of Natural Heritage Areas (NHA and pNHAs), Lough Sheelin pNHA and Lough Kinale and Derragh Lough NHA are located ca. 12km and 22km, respectively, downstream of the WwTP site.

The WwTP does not discharge directly into any European sites. The closest European sites hydrologically connected is the Lough Sheelin SPA which is located ca. 12km downstream of the WwTP. The Moneybeg and Clareisland SAC is located ca. 19km downstream of the WwTP. Lough Kinale and Derragh Lough SPA is located ca. 22km downstream of the WwTP. Derragh Bog SAC is located ca. 16.2km downstream of the WwTP.

The Mountnugent River is not designated as a “*Salmonid Water*” under the European Commission’s (Quality of Salmonid waters) Regulations, 1988, however the River is a salmonid watercourse and holds stock of wild brown trout.

The completion of the upgrade works will lead to an improved wastewater discharge to the Mountnugent River. The effluent discharge standards and the design of the Dual Function Overflow at the WwTP have been set to ensure that the operational discharges from the agglomeration contribute towards achieving “*Good*” status of the Mountnugent River by 2027 in accordance with the European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019 (S.I. No. 77 of 2019) and to ensure there is no environmental risk posed to the receiving environment and its aquatic receptors, including fish species, as a result of the operational discharges from the agglomeration.

3. Waste Assimilative Capacity Calculations

Waste Assimilative Capacity (WAC) calculations have been completed to inform this WWDL review application (refer to **Attachment D.2.3**).

The WAC calculations were based on the 95%ile flow in the receiving water (0.013m³/s, as confirmed by the EPA Hydrometric & Groundwater Section on the 25th November 2021), the notional clean river background concentrations, the Dry Weather Flow (DWF) (1,170 m³ /day – calculated as 5,200 p.e x 225l/p/d), and the ELVs for the discharge as per EPA WWDL D0256-01.

It is clear that other sources of pollution (e.g., agriculture) are contributing to the current status of the receiving waterbody upstream of the WwTP. The sources which give rise to the background concentrations are outside the control of IW. Based on this, the EPA’s notionally clean river approach has been used in the WAC calculations to show the impact of the discharge from the upgraded Ballyjamesduff WwTP alone with respect to water quality standards. This was the approach used by the EPA in their determination of D0256-01 in 2015.

Table D.2.3 - WAC for 5,200 p.e. – Notionally Clean River

Parameter	Notional Clean River Background Concentration	Proposed ELVs (mg/l)	Contribution from Primary Discharge (mg/l)	Predicted D/S Conc (mg/l)	Relevant Standard (mg/l) – 95%ile EQS% Note 1
BOD	0.260	4	1.908	2.168	≤2.6
Ortho-P (MRP)	0.005	0.1	0.0485	0.0535	≤0.075

Parameter	Notional Clean River Background Concentration	Proposed ELVs (mg/l)	Contribution from Primary Discharge (mg/l)	Predicted D/S Conc (mg/l)	Relevant Standard (mg/l) – 95%ile EQS% Note 1
Total Ammonia	0.008	0.2	0.0980	0.1060	≤0.14

Note 1: European Union Environmental Objectives (Surface Waters) (Amendment). Regulations 2019 (S.I. No. 77 of 2019) - Good Status EQS

For the notionally clean river, the predicted downstream concentrations of BOD, Ortho-Phosphate and Total Ammonia, based on the ELVs included in the current WWDL, would comply with the Good status water quality standards in S.I. No. 77 of 2019. This means that for a notionally clean river there would be sufficient assimilative capacity in the receiving water to receive the flows and loads associated with a 5,200 p.e. plant.

The ELVs as specified in the D0256-01 were set by the EPA to ensure no deterioration in the quality of the receiving waters as a result of the discharge. Achieving the ELVs set in the D0256-01 will assist the receiving waters of the Mountnugent River to achieve Good Status as required under the Water Framework Directive and to achieve the requirements of EC Environmental Objectives (Surface Water) Regulations, as amended.

4. Appropriate Assessment

As part of the documentation to support the planning application for the Ballyjamesduff WwTP Upgrade Project, a combined Appropriate Assessment (AA) Screening and Natura Impact Statement report was prepared.

The Appropriate Assessment (AA) Screening considered the likely significant effects, if any, of the proposed development (construction and operation) on European sites.

In relation to the operational phase (subject matter of this WWDL review), the AA screening concluded that the operational discharges from agglomeration are not directly connected with or necessary to the management of any European Site and that it can be excluded, on the basis of objective information, that the operational phase, individually or in combination with other plans or projects, will have a significant effect on any European site. Therefore, it was concluded that the operational discharges from the Ballyjamesduff agglomeration will not be required to be brought forward to the Stage 2 AA assessment. Refer to **Attachment D.2.2** for a copy of the AA Screening Report & Natura Impact Statement, April 2022.

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. The assessment considered the primary discharge relevant to Environmental Quality Standards (EQS) for priority substances in surface waters, as set out in the Surface Waters Regulations (S.I No. 77 of 2019). After dilution, it can be concluded that none of the substances listed in the Specific Pollutants, Priority and Priority Hazardous Substances, are likely to be present in the effluent discharge to the Mountnugent River, at concentrations above the standards in S.I No. 77 of 2019.

Based on the results of this desk top study which has been informed but the 2021 results from Irish Water's (IW) Dangerous Substances Effluent Monitoring Programme, it can be determined that no 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.

This Report is contained in **Attachment D.2.4**: Priority Substance Assessment Report, November 2022.

6. Shellfish Waters

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

7. Bathing Waters

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

8. River Flow Estimation

The 95%ile flow for the WwTP receiving waterbody, Mountnugent_020 is 0.013 m³/s (Data confirmed by the EPA Hydrometric & Groundwater Section on the 25th November 2021: Flow calculated based on a number of spot flows taken at 26040 Ballyjamesduff & and compared against the flow duration curve at synchronous station 26056 Mountnugent Br.).

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 design of the upgraded WwTP at Ballyjamesduff is greater than 2,000 p.e. and therefore in line Article 4 of the directive, "*Member States shall ensure that urban waste water entering a collecting system shall before discharge be subject to secondary treatment or an equivalent treatment [...] for discharges to freshwater from agglomerations of between 2,000 and 10,000 pe*".

The upgraded Ballyjamesduff WwTP will provide a Secondary treatment with P removal.

The ELVs as per D0056-01 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 designations / status of the receiving waterbody, the Mountnugent River.

10. Compliance with Relevant National or EU Legislation

As per **Attachment B.6**, the Ballyjamesduff WwTP has 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 discharge standard will not compromise the achievement of the objectives and EQSs established for any European sites water dependant species and natural habitats and designations in the wider environs or downstream of the agglomeration.

11. Data Sources

The following data sources were used to complete this application.

- Online data available on held by the NPWS, the EPA and Irish Water:
 - www.npws.ie
 - epawebapp.epa.ie
 - gis.epa.ie/EPAMaps
 - catchments.ie
- GIS data for European site boundaries obtained in digital format online from European Environmental Agency
- Irish Water/Cavan County Council Monitoring & Sampling Data

12. Cumulative and In Combination Effects

The Appropriate Assessment Screening Report and Natura Impact Statement addresses in combination effects. Refer to **Attachment D.2.2**.

13. Mixing zone or transitional areas of exceedance

Based on the 95%ile River flow ($0.013\text{m}^3/\text{s}$), and the WwTP DWF ($1,170\text{ m}^3/\text{d}$), there are 1 dilution 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

Not applicable. No High status waterbodies within the region of the Ballyjamesduff operational discharges.

18. Fresh Water Pearl Mussels

Not applicable. No Fresh Water Pearl Mussels within the region of the Ballyjamesduff operational discharges.

19. Impacts on Transboundary / Territory of other States

The operational discharges to which this application relates will not result in transboundary impacts or impacts on the territory of other states.

20. 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.



ATTACHMENT D.2.3:
WASTE ASSIMILATIVE CAPACITY (WAC)
NOVEMBER 2022



Project Number: 20932	Rev	Date	By
Project Name: Ballyjamesduff WWDL Review	1.0	01-Nov-22	NOD
Sheet: 1 of 1			

Waste Assimilative Capacity (WAC) Calculation

Name of River	MOUNTNUGENT_020		2013-2018 & 2016-2021 WFD Status	Poor
River Flow	m ³ /s	Data Source	m ³ /d	PE
				Proposed Design
95% ile Flow	0.013	Data from EPA Hydrometric & Groundwater Section: Flow calculated based on a number of spot flows taken at 26040 Ballyjamesduff & and compared against the flow duration curve at synchronous station 26056 Mountnugent Br .	1,123	5200

Background Concentration			Effluent Values as per current licence	Max Allowable D/S	Legislation	Legislation
	mg/l	Data Source	WWDL ELVs as Set by EPA (mg/l)	95% ile mg/l	Data Ref	Status
Carbonaceous BOD	0.260	EPA Notionally Clean ^{Note 1}	4.00	2.60	SW Regulations	Good status
Total Ammonia (NH ₃)	0.008	EPA Notionally Clean ^{Note 1}	0.20	0.14	SW Regulations	Good status
Ortho-Phosphate (OP)	0.005	EPA Notionally Clean ^{Note 1}	0.10	0.075	SW Regulations	Good status

Dry Weather Flow ^{Note 3}	Flow in River	Allowable Effluent Concentration	WAC	Predicted Downstream Concentration	Comments	Legislation
m ³ /d	95% ile	BOD	BOD	BOD	Treatment Plant Capacity	Comply with SW Regulations
1170	1,123	mg/l	kg/d	mg/l	Proposed Design PE	Yes
m ³ /d	95% ile	NH ₃	NH ₃	NH ₃		
1170	1,123	mg/l	kg/d	mg/l	Proposed Design PE	Yes
m ³ /d	95% ile	OP	OP	OP		
1170	1,123	mg/l	kg/d	mg/l	Proposed Design PE	Yes

Note 1: Notional clean river values for AC based on 1/5th of the mean "High Status" standard in S.I No. 77 of 2019
 Note 2: S.I. No. 77/2019 - European Union Environmental Objectives (Surface Waters) (Amendment) Regulations 2019
 Note 3: using 225 lpd



ATTACHMENT D.2.4:

**PRIORITY SUBSTANCE ASSESSMENT
REPORT
NOVEMBER 2022**

Priority Substances Assessment

Agglomeration Name:	Ballyjamesduff
Licence Register No.	D0256-01 Licence Review



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Appendix 1 – Screening of Parameters for Priority Substances

1 Introduction

This report has been prepared for the **Ballyjamesduff agglomeration**, to inform the application of a wastewater discharge licence review.

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

Wastewater effluent sampling at Ballyjamesduff was undertaken on the 28th April 2021 as part of Irish Water's (IW) Dangerous Substances Effluent Monitoring Programme. The results of this monitoring were used to inform this assessment

2 Desktop Study

2.1 Assessment of Analysis Required

A. Review of all industrial inputs into WWTP

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

The influent to the WwTP is primarily domestic wastewater. There are no active IE/IPC or waste licensed activities in the vicinity with discharges to the agglomeration. There are 3 no. licensed trade effluent activities (i.e., a Carwash, a food establishment, and an integrated cardboard box manufacturer), with a combined licenced p.e. of 126 p.e., discharging to the agglomeration sewers under Section 16 of the Local Government (Water Pollution) Acts 1977 and 1990. 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 Ballyjamesduff, **Table 2.1** provides an indicative list of non-domestic discharge types to the WwTP and details potential dangerous/priority substance.

Table 2.1 – List of Non-Domestic Discharge Types to WwTP and Details of Potential Dangerous/Priority Substance

Type of Industry within the Agglomeration	Potential Source of Dangerous / Priority Substances (Yes / No)	Dangerous / Priority Substances Monitoring Undertaken (Yes / No)	List of Potential Dangerous Substances Based on Industry Type (Source: <i>Technical Assessment Manual - Sectoral Profile Data</i>)
Garages and Filling Stations	Yes	Unknown	Benzene Di (2-ethylhexyl) phthalate (DEHP) Lead and its compounds Naphthalene

Type of Industry within the Agglomeration	Potential Source of Dangerous / Priority Substances (Yes / No)	Dangerous / Priority Substances Monitoring Undertaken (Yes / No)	List of Potential Dangerous Substances Based on Industry Type (Source: <i>Technical Assessment Manual - Sectoral Profile Data</i>)
			Nickel and its compounds Cadmium and its compounds Mercury and its compounds Chromium (III) Copper Toluene Xylenes (Total) Zinc
Construction	Yes	Unknown	Lead and its compounds Nickel and its compounds Mercury and its compounds Arsenic Chromium (III) Copper Zinc
Schools and Universities	Yes	Unknown	Dichloromethane Lead and its compounds Nickel and its compounds Trichloromethane
Hairdressers	Yes	Unknown	Nickel and its compounds Cadmium and its compounds
Dentists	Yes	Unknown	Octylphenols Mercury and its compounds
Sewage and refuse disposal, sanitation, and similar activities	Yes	Unknown	Lead and its compounds Nickel and its compounds Dieldrin Cadmium and its compounds Mercury and its compounds Arsenic Chromium (VI) Copper Cyanide Fluoride Zinc
Manufacture of machinery and equipment n.e.c.	Yes	Unknown	Dichloromethane Lead and its compounds Nickel and its compounds Chromium (III) Copper Toluene Xylenes (Total) Zinc
Manufacture of pulp, paper and paper products	No	Unknown	Not applicable

B. Discharge monitoring

Wastewater effluent sampling at Ballyjamesduff was undertaken on the 28th April 2021 as part of Irish Water's (IW) Dangerous Substances Effluent Monitoring Programme. The results of this monitoring were used to inform this assessment.

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

There is recent no priority substances monitoring data for the downstream ambient monitoring location on the Mountnugent River.

D. 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.

3 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.

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

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	Desk Top Study and Screening Analysis
Does the assessment include a review of licensed / authorised inputs to the works?	Yes
Does the assessment include a review of other (unauthorised) inputs to the works?	Yes
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)	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?	No

4 Conclusion

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. The assessment considered the primary discharge relevant to Environmental Quality Standards (EQS) for priority substances in surface waters, as set out in the Surface Waters Regulations (S.I No. 77 of 2019).

After dilution, it can be concluded that none of the substances listed in the Specific Pollutants, Priority and Priority Hazardous Substances, are likely to be present in the effluent discharge to the Mounthugent River, at concentrations above the standards in S.I No. 77 of 2019.

Based on the results of this desk top study which has been informed by the 2021 results from Irish Water's (IW) Dangerous Substances Effluent Monitoring Programme, 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.

Appendix 1 – Screening of Parameters for Priority Substances

AA: Annual Average

MAC: Maximum Allowable Concentration

EQS: Environmental Quality Standards

Dilution factor in receiving water: 1.5 dilution estimated immediately in the proximity of the discharge point (based on current DWF based on current 2021 p.e. of 3,324 (2021 AER) *i.e.*, 748m³/day and 95%ile flow 0.013 m³/s) the nature of the receiving waterbody, Mountnugent River)

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) ¹	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	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
2	Carbon tetrachloride	VOCs	12	12	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
3	1,2-Dichloroethane	VOCs	10	10	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
4	Dichloromethane	VOCs	20	20	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
5	Tetrachloroethylene	VOCs	10	10	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
6	Trichloroethylene	VOCs	10	10	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
7	Trichlorobenzenes	VOCs	0.4	0.4	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
8	Trichloromethane	VOCs	2.5	2.5	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
9	Xylenes (all isomers)	VOCs	10	10	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
10	Ethyl Benzene	VOCs	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	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) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
11	Toluene	VOCs	10	10	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
12	Naphthlene ¹	PAHs	2	2	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
13	Fluoranthene ¹	PAHs	0.0063	0.0063	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
14	Benzo[k]fluoranthene ²	PAHs	MAC of 0.017	MAC of 0.017	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
15	Benzo[ghi]perylene ²	PAHs	MAC of 8.2×10^{-3}	MAC of 8.2×10^{-4}	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No

¹ The EQS for these substances shall take effect from 22 December 2015

² No indicative parameter is provided for this group of substances

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
16	Indeno[1,2,3-c,d]pyrene ²	PAHs			<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
17	Benzo[b]fluoranthene ²	PAHs	MAC of 0.017	MAC of 0.017	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
18	Benzo[a]pyrene	PAHs	1.7 x 10 ⁻⁴	1.7 x 10 ⁻⁴	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
19	Di(2-ethylhexyl)phthalate (DEHP)	Plasticiser	1.3	1.3	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
20	Isodrin ³	Pesticides	Σ=0.01	Σ=0.005	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
21	Dieldrin ³	Pesticides			<LOD	IW Dangerous Substances Effluent	28 th April 2021	No	No

³ 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) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						Monitoring Programme			
22	Diuron	Pesticides	0.2	0.2	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
23	Isoproturon	Pesticides	0.3	0.3	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
24	Atrazine	Pesticides	0.6	0.6	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
25	Simazine	Pesticides	1	1	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
26	Glyphosate	Pesticides	60	-	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
27	Mecoprop	Pesticides	n/a	n/a	<LOD	IW Dangerous Substances Effluent	28 th April 2021	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) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						Monitoring Programme			
28	2,4-D	Pesticides	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
29	MCPA	Pesticides	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
30	Linuron	Pesticides	0.7	0.7	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
31	Dichlobenil	Pesticides	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
32	2,6-Dichlorobenzamide	Pesticides	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
33	PCBs	PCBs	n/a	n/a	<LOD	IW Dangerous Substances Effluent	28 th April 2021	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) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						Monitoring Programme			
34	Phenols (as Total C)	Phenols	8	8	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
35	Lead	Metals	1.2	1.3	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
36	Arsenic	Metals	25	20	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
37	Copper	Metals	5 or 30 ²	5	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
38	Zinc	Metals	8 or 50 or 100 ³	40	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
39	Cadmium	Metals	0.08 or 0.09 or	0.2	<LOD	IW Dangerous Substances Effluent	28 th April 2021	No	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
			0.15 or 0.25 ⁴			Monitoring Programme			
40	Mercury	Metals	MAC of 0.07	MAC of 0.07	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	Yes	No
41	Chromium VI	Metals	3.4	0.6	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
42	Selenium	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
43	Antimony	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
44	Molybdenum	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
45	Tin	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent	28 th April 2021	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) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						Monitoring Programme			
46	Barium	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
47	Boron	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
48	Cobalt	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
49	Vanadium	Metals	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	N/A	N/A
50	Nickel	Metals	4	8.6	<LOD	IW Dangerous Substances Effluent Monitoring Programme	28 th April 2021	No	No
51	Fluoride	General	500	1,500	520	IW Dangerous Substances Effluent	28 th April 2021	Yes	No

No.	Compound	Group of compounds	AA-EQS Inland SW (µg/l)	AA-EQS Other SW (µg/l)	Estimated Conc. (µg/l) ¹	Data Source	Sample Date (if applicable)	Effluent Concentration above AA concentration (Yes/No)	Effluent Concentration above AA concentration after dilution (Yes/No)
						Monitoring Programme Sample			
52	Chloride	General	N/A	N/A	<LOD	IW Dangerous Substances Effluent Monitoring Programme Sample	28 th April 2021	N/A	N/A
53	TOC	General	n/a	n/a	<LOD	IW Dangerous Substances Effluent Monitoring Programme Sample	28 th April 2021	N/A	N/A
54	Cyanide	General	10	10	<LOD	IW Dangerous Substances Effluent Monitoring Programme Sample	28 th April 2021	N/A	N/A
	Conductivity	General	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Hardness (mg/l CaCO ₃)	General	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	pH	General	N/A	N/A	N/A	N/A	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 CaCO₃ is less than or equal to 100; the value 30 applies where the water hardness exceeds 100 mg/l CaCO₃. Estimated CaCO₃ 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 CaCO₃, 50 µg/l for water hardness greater than 10 mg/l CaCO₃ and less than or equal to 100 mg/l CaCO₃ and 100 µg/l elsewhere. Estimated CaCO₃ 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 CaCO₃/l, Class 2: 40 to <50 mg CaCO₃/l, Class 3: 50 to <100 mg CaCO₃/l, Class 4: 100 to <200 mg CaCO₃/l and Class 5: >200 mg CaCO₃/l)