Annual Environmental Report

2021

Kenmare

D0184-01

CONTENTS

7 APPENDIX

7.1 AMBIENT MONITORING SUMMARY

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2021 AER

This Annual Environmental Report has been prepared for D0184-01, Kenmare, in Kerry in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports where relevant are included as an appendix to the AER.

1.1 ANNUAL STATEMENT OF MEASURES

A summary of any improvements undertaken is provided where applicable.

Upgrade of the existing Kenmare WwTP: To comply with License ELV's and Provide A Total Treatment Capacity of 9.800PE. The existing inlet channel, control panels, oxidation ditch, two sludge holding tanks will be decommissioned and all redundant civil infrastructure and mechanical and electrical (M&E) assets will be removed. A new inlet works, treatment system and associated pumping and storage infrastructure will be constructed. A new motor control centre (MCC) kiosk and a new dosing kiosk will also be constructed, along with all associated ancillary works. - Upgrade of the existing Cromwell's Bridge PS: The existing inlet works, grit separator, wet well, control building (including dry well) and storm tank will be decommissioned and all redundant civil infrastructure and mechanical and electrical (M&E) assets will be removed. A new wet well, and associated sewer, a new storm tank and retaining wall will be constructed. An odour treatment system and vent stack will be constructed.

1.2 TREATMENT SUMMARY

The agglomeration is served by a wastewater treatment plant(s)

- KENMARE WWTP with a Plant Capacity PE of 5833, the treatment type is 2 - Secondary treatment

1.3 ELV OVERVIEW

The overall compliance of the final effluent with the Emission Limit Values (ELVs) is shown below. More detailed information on the below ELV's can be found in Section 2.

Discharge Point Reference	Treatment Plant	Discharge Type	Compliance Status	Parameters failing if relevant
TPEFF1300D0184SW001	KENMARE WWTP	Treated	Non-Compliant	Ammonia-Total (as N) mg/l ortho-Phosphate (as P) - unspecified mg/l

1.4 LICENCE SPECIFIC REPORTING

Assessment / Report
There are no Licence Specific Reports included in this AER.

2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY

2.1 KENMARE WWTP - TREATED DISCHARGE

2.1.1 INFLUENT MONITORING SUMMARY - KENMARE WWTP

A summary of influent monitoring for the treatment plant is presented below. This monitoring is primarily undertaken in order to determine the overall efficiency of the plant in removing pollutants from the raw wastewater.

Parameters	Number of Samples	Annual Max	Annual Mean
pH units	12	7.50	7.18
COD-Cr mg/l	12	773	342
Ammonia-Total (as N) mg/l	12	37	17
Suspended Solids mg/l	12	436	165
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	371	165
Hydraulic Capacity	N/A	1907	1526

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 2.1.5 if applicable.

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity. Further details on the plant capacity and efficiency can be found under the sectional ‘Operational Performance Summary’. The design of the wastewater treatment plant allows for peak values and therefore the peak loads have not impacted on compliance with Emission Limit Values.

2.1.2 EFFLUENT MONITORING SUMMARY - TPEFF1300D0184SW001

Parameter	WWDL ELV (Schedule A)	ELV with Condition 2 Interpretation included Note 1	Interim % reduction from influent concentration	Number of sample results	Number of exceedances	Number of exceedances with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	12	N/A	N/A	30	Pass
Suspended Solids mg/l	35	87.5	N/A	12	N/A	N/A	5.84	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	10	20	N/A	12	N/A	N/A	3.96	Pass
pH units	9.00	9.00	N/A	12	N/A	N/A	6.98	Pass
Ammonia-Total (as N) mg/l	0.600	1.20	N/A	12	2	2	0.292	Fail
ortho-Phosphate (as P) - unspecified mg/l	0.300	0.600	N/A	12	12	12	1.83	Fail
Conductivity @20°C µS/cm	N/A	N/A	N/A	12	N/A	N/A	846	
Visual Inspection Descriptive	N/A	N/A	N/A	12	N/A	N/A	N/A	
Alkalinity-total (as CaCO3) mg/l	N/A	N/A	N/A	4	N/A	N/A	41	

Notes:
1 – This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 – For pH the WWDA specifies a range of pH 6 - 9

Cause of Exceedance(s):

The WWTP is not designed for nutrient removal. An upgrade to the WWTP is scheduled to commence in late 2022.

Significance of Results:

The WWTP is not compliant with the ELV's set out in the Wastewater License. The impact on the receiving waters is accessed further in Section 2.

2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1300D0184SW001

A summary of monitoring from ambient monitoring points associated with the wastewater discharge is provided in the sections below. For discharges to rivers upstream (U/S) and downstream (D/S) location data is provided. For other ambient points in lakes, coastal or transitional waters, monitoring data from the most appropriate monitoring station is selected.

The table below provides details of ambient monitoring locations and details of any designations as sensitive areas.

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	River Station Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Ecological Status
Upstream	90912, 70992	RS21F010510	No	No	No	Yes	Moderate
Downstream	89408, 69831	TW13003200KN1006	No	No	No	Yes	Good

The results for ambient results and / or additional monitoring data sets are included in the **Appendix 7.1 - Ambient monitoring summary**

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence for the following: Ammonia-Total (as N) mg/l, ortho-Phosphate (as P) - unspecified mg/l.

The ambient monitoring results meet the required EQS. The EQS relates to the Oxygenation and Nutrient Conditions set out in the Surface Water Regulations 2009.

The discharge from the wastewater treatment plant does not have an observable impact on the water quality.

The discharge from the wastewater treatment plant does not have an observable negative impact on the Water Framework Directive status.

2.1.4 OPERATIONAL PERFORMANCE SUMMARY - KENMARE WWTP

2.1.4.1 Treatment Efficiency Report - KENMARE WWTP

Treatment efficiency is based on the removal of key pollutants from the influent wastewater by the treatment plant. In essence the calculation is based on the balance of load coming into the plant versus the load leaving the plant. The efficiency is presented as a percentage removal rate.

A summary presentation of the efficiency of the treatment process including information for all the parameters specified in the licence is included below:

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)
TP	N/A	N/A	N/A
COD	190532	11634	94
cBOD	91992	1514	98
SS	91925	2231	98
TN	N/A	N/A	N/A

Note: The above data is based on sample results for the number of dates reported

2.1.4.2 Treatment Capacity Report Summary - KENMARE WWTP

Treatment capacity is an assessment of the hydraulic (flow) and organic (the amount of pollutants) load a treatment plant is designed to treat versus the current loading of that plant.

KENMARE WWTP	
Peak Hydraulic Capacity (m^3/day) - As Constructed	2419
DWF to the Treatment Plant (m^3/day)	806
Current Hydraulic Loading - annual max (m^3/day)	1907
Average Hydraulic loading to the Treatment Plant (m^3/day)	1525.66
Organic Capacity (PE) - As Constructed	5833
Organic Capacity (PE) - Collected Load (peak week)[Note1]	5376
Organic Capacity (PE) - Remaining	457
Will the capacity be exceeded in the next three years? (Yes/No)	No

Nominal design capacities can be based on conservative design principles. In some cases assessment of existing plants has shown organic capacities significantly higher than the nominal design capacity. Accordingly plants that appear to be overloaded when comparing a collected peak load with the nominal design capacity can be fully compliant due to the safety factors in the original design.

2.1.5 SLUDGE / OTHER INPUTS - KENMARE WWTP

'Other inputs' to the waste water treatment plant are summarised in table below

Input type	Quantity	Unit	P.E.	% of load to WWTP	Included in Influent Monitoring (Y/N)?	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
There is no Sludge and Other Input data for the Treatment Plant included in the AER.							

3 COMPLAINTS AND INCIDENTS

3.1 COMPLAINTS SUMMARY

A summary of complaints of an environmental nature related to the discharge(s) to water from the WWTP and network is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environmental complaints in 2021.			

3.2 REPORTED INCIDENTS SUMMARY

Environmental incidents that arise in an agglomeration are reported on an on-going basis in accordance with our waste water discharge licences. Where an incident occurs and it is reportable under the licence, it is reported to the Environmental Protection Agency through their Environmental Data Exchange Network, or in some instances by telephone. Some incidents which arise in the agglomeration are recorded by Irish Water but may not be reportable under our licence for example where the incident does not have an impact on environmental performance.

A summary of reported incidents is included below.

3.2.1 SUMMARY OF INCIDENTS

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Breach of ELV	WWTP not designed for P removal	1	Yes	No
Spillage	Broken Sewer Pipe	1	No	Yes
Uncontrolled release	Tank Overflow	1	No	No

3.2.2 SUMMARY OF OVERALL INCIDENTS

Question	Answer
Number of Incidents in 2021	3
Number of Incidents reported to the EPA via EDEN in 2021	3
Explanation of any discrepancies between the two numbers above	N/A

4 INFRASTRUCTURAL ASSESSMENTS AND PROGRAMME OF IMPROVEMENTS

4.1 STORM WATER OVERFLOW IDENTIFICATION AND INSPECTION REPORT

A summary of the operation of the storm water overflows and their significance where known is included below:

4.1.1 SWO IDENTIFICATION

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
TBC	90890, 70191	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	91196, 71071	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	91195, 69834	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	91455, 70917	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	90844, 71033	No	Low	Meeting	Unknown	Unknown	Not Monitored
TBC	90769, 70893	No	Medium	Meeting	Unknown	Unknown	Not Monitored

WWDL Name / Code for Storm Water Overflow (chamber) where applicable	Irish Grid Ref. (outfall)	Included in Schedule of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2021 (No. of events)	Total volume discharged in 2021 (m3)	Monitoring Status
SW002	90769, 70893	Yes	Medium	Meeting	Unknown	Unknown	Not Monitored

Any TBC SWO(s) were identified as part of the on-going National SWO programme and will be updated in subsequent AER(s) once the information is confirmed.

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
Is each SWO identified as not meeting DoEHLG Guidance included in the Programme of Improvements?	N/A
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / changes to Schedule C3 and A4 under Condition 1.7?	No

4.2 REPORT ON PROGRESS MADE AND PROPOSALS BEING DEVELOPED TO MEET THE IMPROVEMENT PROGRAMME REQUIREMENTS.

4.2.1 SPECIFIED IMPROVEMENT PROGRAMME SUMMARY

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Specified Improvement Programmes (under Schedule A and C of WWDL)	Description	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
D0184-SIP:01	Any improvement works required to ensure compliance with the emission limit values as set out in Schedule A: Discharges & Discharge Monitoring	C	31/12/2019	Yes	At Planning Stage	2024	

A summary of the status of any other improvements identified by under Condition 5 assessments- is included below.

4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement Identifier	Improvement Description / or any Operational Improvements	Improvement Source	Expected Completion Date	Comments
No additional improvements planned at this time.				

4.2.3 SEWER INTEGRITY RISK ASSESSMENT

The utilisation of multiple capital maintenance programmes and the outputs of the workshops with the Local Authority Operations Staff held under the programme can be used to satisfy the requirements of Condition 5 regarding network integrity. Improvement works identified by way of these programmes and workshops will be included in the Improvements Summary Tables 4.2.1 and 4.2.2.

5 LICENCE SPECIFIC REPORTS

A wastewater discharge licence may require a number of reports on specific subject areas to be prepared for the agglomeration in question. These reports are submitted to the EPA as part of the Annual Environmental Report. This section provides a list of the various reports required for this agglomeration and a brief summary of their recommendations.

Licence Specific Report	Required by licence	Year included in AER	Included in this AER
Priority Substances Assessment	Yes	2016	No
Shellfish Impact Assessment	Yes		No

6 CERTIFICATION AND SIGN OFF

6.1 SUMMARY OF AER CONTENTS

Parameter	Answer
Does the AER include an Executive Summary?	Yes
Does the AER include an assessment of the performance of the Waste Water Works (i.e. have the results of assessments been interpreted against WWDL requirements and or Environmental Quality Standards)?	Yes
Has a Technical amendment/licence review application been submitted to the Agency by IW?	Yes
List reason e.g. additional SWO identified	To include additional SWO identified
Is there a need to request/advise the EPA of any modification to the existing WWDL with respect to condition 4 changes to monitoring location, frequency etc	No
List reason e.g. changes to monitoring requirements	N/A
Have these processes commenced?	Yes
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	N/A

I certify that the information given in this Annual Environmental Report is truthful, accurate and complete:

Date: 12/05/2022

This AER has been produced by Irish Water's Environmental Information System (EIMS) and has been electronically signed off in that system for and on behalf of,

Katherine Walshe

Acting Head of Environmental Regulation

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

KENMARE D0184

Ambeint Monitoring Report Summary Data

		Designations										
Ambient monitoring point/Coastal Monitoring Code	Irish Grid Reference	Bathing Water	Drinking Water	FWPM	Shellfish	WDF Status						
RS21F010510	E90912:N70992	No	No	No	No	Good						
TW13003200KN1006	E89408:N69831	No	No	No	Yes	Good						

Ambient Monitoring Results Summary

Monitoring point	Date	Visual Inspection	pH	BOD mg/l	COD mg/l	SS mg/l	Ortho P mg	NH3-N mg/l	Temperatu	Dissolved Oxygen	Saline Ammonia	Salinity
RS21F010510	25/03/2021	Clear	8	<1	<10	<2	<0.01	<0.02	10	10		<0.10
TW13003200KN1006	25/03/2021	Clear	8.3	1.4	56	5	<0.01		10.8	10.1	<0.035	6.3
RS21F010510	21/06/2021	Clear	8.1	2.2	13	<4	<0.01	<0.02	14.6	9.89		<0.10
TW13003200KN1006	21/06/2021	Clear	7.9	<1.0	29	6	0.01		14.1	9.99	<0.035	33.5
RS21F010510	30/07/2021	Clear	7.7	1.1	18	<4.0	<0.01	<0.02	13.7	8.86		<0.10
TW13003200KN1006	30/07/2021	Clear	8.1	1.2	49	<4.0	0.01		17.1	7.79	<0.035	32.6
RS21F010510	17/11/2021	Clear	7.6	<1.0	10	<4.0	0.01	<0.02	9.8	9.8	<0.1	
TW13003200KN1006	17/11/2021	Clear	7.9	<1.0	23	8	0.01		11.4	8.9	<0.035	22.5

Bathing Water Results Summary (if revelant)

Monitoring point	Date	Parameter 1	Paramete	Parameter	Parameter 4							
		Results	Results	Results	Results							

Parameter Name	U/S Location	U/S Annual Mean	D/S Location	D/S Annual Mean	Difference	EQS	% of EQS
BOD (mg/l)	90912, 70992	1.325	89408, 69831	1.150	0.175	1.500	11.667
Ammonia (mg/l)	90912, 70992		89408, 69831	0.035	-0.035	0.065	-53.8
Ortho-phosphate (mg/l)	90912, 70992	0.010	89408, 69831	0.010	0.000	0.035	0.0
pH	90912, 70992	7.850	89408, 69831	8.050	-0.200		#DIV/0!