# Annual Environmental Report





Fiddown

D0528-01

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# **1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2020 AER**

This Annual Environmental Report has been prepared for D0528-01, Fiddown, in Kilkenny 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.

Major upgrade required

# **1.2 TREATMENT SUMMARY**

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

• Fiddown WWTP - 2020 with a Plant Capacity PE of 608, the treatment type is 1 - Primary 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
TPEFF1500D0528SW001	Fiddown WWTP - 2020	Treated	Non-Compliant	Ammonia-Total (as N) mg/l BOD, 5 days with Inhibition (Carbonaceo mg/l COD-Cr mg/l ortho-Phosphate (as P) - unspecified mg/l Suspended Solids mg/l Total Nitrogen mg/l

Included in AER

# **1.4 LICENCE SPECIFIC REPORTING INCLUDED IN AER**

Assessment /	Report
,	

There are no Licence Specific Reports included in the AER.

# **2 TREATMENT PLANT PERFORMANCE AND IMPACT SUMMARY**

# 2.1 FIDDOWN WWTP - 2020 - TREATED DISCHARGE

#### **2.1.1 INFLUENT MONITORING SUMMARY - FIDDOWN WWTP - 2020**

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
Total Nitrogen mg/l	6	191.1	107.87
Suspended Solids mg/l	6	735	338.17
Total Phosphorus (as P) mg/l	6	16.78	9.73
COD-Cr mg/l	6	934	566.33
BOD, 5 days with Inhibition (Carbonaceo mg/l	6	300	216
Hydraulic Capacity	N/A	130	130

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 tretament 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 - TPEFF1500D0528SW001

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 with Condition 2 Interpretation included	Annual Mean	Overall Compliance (Pass/Fail)
COD-Cr mg/l	125	250	N/A	6	6	6	516.5	Fail
Total Nitrogen mg/l	40	48	N/A	6	6	5	79.15	Fail
Suspended Solids mg/l	35	87.5	N/A	6	6	5	143.83	Fail
BOD, 5 days with Inhibition (Carbonaceo mg/I	25	50	N/A	6	6	6	218	Fail
pH pH units	9	9	N/A	6	N/A	N/A	7.58	Pass
ortho- Phosphate (as P) - unspecified mg/I	5	6	N/A	6	4	3	6.19	Fail
Ammonia-Total (as N) mg/l	5	6	N/A	6	6	6	49.79	Fail
Total Phosphorus (as P) mg/l	N/A	N/A	N/A	6	N/A	N/A	8.86	

Notes:

1 - This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied

#### **Cause of Exceedance(s):**

Ammonia, N, COD, BOD, SS, and ortho (primary treatment, plant upgrade required as per previous AERs)

#### Significance of Results:

Plant not compliant

# 2.1.3 AMBIENT MONITORING SUMMARY FOR THE TREATMENT PLANT DISCHARGE TPEFF1500D0528SW001

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 Status
Upstream	246545, 119738	TW31002103SR5001	No	No	No	No	Poor

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.

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 - FIDDOWN WWTP - 2020

#### 2.1.4.1 Treatment Efficiency Report - Fiddown WWTP - 2020

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)	
SS	16910	7192	57	
COD	28320	25828	8.8	
cBOD	10801	10901	-0.93	
TN	5394	3958	27	
ТР	486	443	8.88	

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

#### 2.1.4.2 Treatment Capacity Report Summary - Fiddown WWTP - 2020

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.

Fiddown WWTP - 2020	
Peak Hydraulic Capacity (m³/day) - As Constructed	411
DWF to the Treatment Plant (m <sup>3</sup> /day)	137
Current Hydraulic Loading - annual max (m³/day)	130

Fiddown WWTP - 2020	
Average Hydraulic loading to the Treatment Plant (m³/day)	130
Organic Capacity (PE) - As Constructed	608
Organic Capacity (PE) - Collected Load (peak week) <sup>Note1</sup>	420
Organic Capacity (PE) - Remaining	188
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 - FIDDOWN WWTP - 2020

'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 is included below.

Number of Complaints	Nature of Complaint	Number Open Complaints	Number Closed Complaints
There were no relevant environme	ental complaints in 2020.		

# **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 upgrade required to meet ELV	1	Yes	No

# **3.2.2 SUMMARY OF OVERALL INCIDENTS**

Question	Answer
Number of Incidents in 2020	1
Number of Incidents reported to the EPA via EDEN in 2020	1
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	lrish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow(High / Medium / Low)	Assessed against DoEHLG Criteria	No. of times activated in 2020 (No. of events)	Total volume discharged in 2020 (m3)	Monitoring Status
SW002	TBC, TBC	Yes	Unknown	Not yet Assessed	Unknown	Unknown	Unknown

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 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
D0528-SIP:01	Upgrade Fiddown WWTP to provide secondary treatment with nutrient removal	С	31/12/2019	Yes	Not Started		Capital works not funded in RC3. Capital works funding post 2024 will be contingent on the project being included in the 2025-2029 investment period.

A summary of the status of any improvements identified by under Condition 5.2 is included below.

# 4.2.2 IMPROVEMENT PROGRAMME SUMMARY

Improvement	Improvement Description / or any Operational	Improvement	Expected Completion	Comments
Identifier	Improvements	Source	Date	
There are no Improven	nents Programme for this Agglomeration.			

# 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 Table.

# **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 list of the various reports required for this agglomeration and a brief summary of their recommendations.

5.a Licence Specific Reports Summary Table

Licence Specific Report	Required by licence	Year included in AER	Included in this AER	Reference to relevant section of AER
Priority Substances Assessment	Yes	2015	No	

# **5.1 PRIORITY SUBSTANCES ASSESSMENT**

The Priority Substances Assessment Report has been included in the AER 2015

# **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
Is there a need to advise the EPA for consideration of a Technical Amendment / Review of the licence?	No
List reason e.g. additional SWO identified	N/A
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?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	Yes

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

Signed: Date: 11/05/2021

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

Upstream Fiddown WWTP																			
	WaterbodyCode	Waterbodytype				MonitoringStationLocalAy SampleCode	SampieDate	SampleMethod	ParameterName	ParameterUnit/PrortCode		Recult	TextResult	ResultString	LimitOfDetection	ReportResult	ReportTextResult	ReportRepultitring	ReportLimit
				SR330 - Suir Estuary at I		Waterford City & County- 20-10652		TRaC Depth Composite	Chiprophyli	heat	Microerammes per Litre	94		OK .	1			06	1
	15 55 100 0550	Transitional	Tw2:002:03585001	SR330 - Suir Estuary at I		Waterford City & County- 20-10652		TRaC Depth Composite			millerans per litre	0.044		OK .	0.01			06	0.01
	15 55 100 0550	Transitional	Tw2:002:03585001	SR230 - Suir Extuary at I		Waterford City & County- 20-10652		TRaC Depth Composite			millerans per litre	0.053		OK .	0.005	0.05		06	0.005
	15 55 100 0550	Transitional	TW2:002103585001	SR330 - Suir Estuary at I		Waterford City & County- 20-10652		TRaC Depth Composite		pH units	oli Units	5		OK .	2			06	2
	15 55 100 0550	Transitional	TW2:002103585001	SR230 - Suir Extuary at I		Waterford City & County- 20-10652	08/07/2020			PSU	Practical salinity units	0.3		OK .	0.1	0.		06	0.1
	15 55 100 0550	Transitional	TW2:002103585001	SR330 - Suir Estuary at I		Waterford City & County- 20-10652		TRaC Depth Composite			Metres	2.3		OK .	0.1	2		06	0.1
	15 55 100 0550	Transitional	TW2:002103585001	SR330 - Suir Estuary at I		Waterford City & County- 20-10652	08/07/2020		Temperature	A'C	Degrees centrigrade	162		OK .		16.		06	
	15 55 100 0550	Transitional	TW2:002103585001	SR230 - Suir Extuary at I		Waterford City & County- 20-10652	08/07/2020			me/i	millerans per litre	9.4		OK .	2	9.		06	2
	15 55 100 0550	Transitional	TW2:002103585001	SR330 - Suir Estuary at I		Waterford City & County- 20-10652	08/07/2020		Disspleed Oween	% Saturation	Percentage Saturation	107		OK .	1	10		06	1
	15 55 100 0550	Transitional	TW2:002103585001	SR230 - Suir Extuary at I		Waterford City & County- 20-10652	08/07/2020		True Colour	me/litre Pt Co	Millerammer per Itre Co	13		OK .	5	1		06	5
Middle Sair Estaary	IE SE 100 0550	Transitional	TW2:002:03585001	SR230 - Suir Extuary at 1	Fe Pretend	Waterford City & County 20-10653	06/07/2020	TRaC Depth Composite	Silica (as SO2)	nel	millerans per litre	2.5		OK.	0.5	2		QK.	0.1
	IE_SE_100_0550	Transitional	TW21002103585001	SR230 - Suir Ectuary at I		Waterford City & County 20-10652	08/07/2020		Suspended Solids	ing/1	milligrams per litre	177		OK.	4	17		ΩK.	6
Middle Sair Estaary	IE SE 100 0550	Transitional	TW210021025R5001	SR230 - Suir Eduary at	Fa Presentd	Waterford City & County 20-10653	06/07/2020	TRaC Depth Composite	BOD - 5 days (Total)	DE/	milligrams per litre	4.3		OK	1	4		QK .	1
Middle Sair Estaary	IE SE 100 0550	Transitional	TW210021025R5001	SR230 - Suir Eduary at	Fa Presentd	Waterford City & County 20-10653	06/07/2020	TRaC Depth Composite	Dwoth	0	Metres	0.3		OK		0.		QK .	
Middle Sair Estaary	IE SE 100 0550	Transitional	TW210021025R5001	SR230 - Suir Eduary at	Fa Presentd	Waterford City & County 20-10653	06/07/2020	TRaC Depth Composite	Salinity(Lab)	0/00	0/00	0.3		OK	0.5	0.		QK .	0.1
Middle Sair Estaary	IE SE 100 0550	Transitional	TW250021025R5001	SR230 - Suir Eduary at	Fa Presentd	Waterford City & County 20-10653	06/07/2020	TRaC Depth Composite	Total Oxidized Nitropen Ia	DEA	milligrams per litre	2.5		OK	0.00	2		QK .	0.01
Middle Sair Estuary	IE SE 100 0550	Transitional	TW21002103585001	SR330 - Suir Estuary at I	Fe Pretend	Waterford City & County: 20-10653	08/07/2020	TRaC Depth Composite											
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Downstream Fiddown WY		-							•										
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Waterbody/Name Middle Sair Estuary	WaterbodyCode	Transitional	TW250021035R5002	SR340 - Suir Extuary at i	Pc Pretend	Waterford City & County: 20-10646	06/07/2020	SampieWethod TRaC Depth Composite	FarameterName Ammonia-Total las M	ne/)	millerans per litre	Result 0.043	Totizuit	ResultString	LimitOfDetection 0.01	RecortResult 0.04	Record Text Result	Record Recultifying	Recortiimit 0.01
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