Annual Environmental Report

2018

Elphin

D0230-01

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1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0230-01, Elphin, in Roscommon in accordance with the requirements of the wastewater discharge licence for the agglomeration. Specified reports are included as an appendix to the AER as follows:

1.1 Licence specific reporting included in AER

Assessment / Report	Included in AER

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant ELPHIN WASTEWATER TREATMENT WORKS WWTP with a Plant Capacity PE of 1900. The treatment process includes the following:

1.2.1 ELPHIN WASTEWATER TREATMENT WORKS WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	screening and grit removal
Primary Treatment	No	
Secondary Treatment	Yes	SBR
Nutrient Removal	Yes	Chemical dosing for phosphorous removal
Tertiary Treatment	No	

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 2.2 Discharges from the agglomeration.

1.3 ELV Overview

1.3.1 ELPHIN WASTEWATER TREATMENT WORKS WWTP

Compliance Status	
Were all parameters compliant for ELPHIN WASTEWATER TREATMENT WORKS WWTP treatment plant	No
Where noncompliant see table 2.2.1 for details of parameters	

1.4 Sludge Removal

The amount of sludge removed from the wastewater treatment plant is shown below along with the transported destination of the sludge from the treatment plant.

Treatment Plant	Sludge type	Quantity	Unit	% Dry Solids	Destination
ELPHIN WASTEWATER TREATMENT WORKS WWTP	Liquid Sludge	198	Volume (m3)	2.5	Castlerea WWTP
ELPHIN WASTEWATER TREATMENT WORKS WWTP	Liquid Sludge	119	Volume (m3)	2.5	Longford Town WWTP

Annual Statement of Measures

None

2 MONITORING REPORTS SUMMARY

2.1 Summary report on monthly influent monitoring

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

2.1.1 Influent Monitoring Summary - ELPHIN WASTEWATER TREATMENT WORKS WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	233	105.81
Total Phosphorus (as P) mg/l	12	5.66	2.82
COD-Cr mg/l	24	743	257.01
Total Nitrogen mg/l	12	36	19.89
Suspended Solids mg/l	24	364	138.89
Hydraulic Capacity	0	1335	545

If other inputs in the form of sludge / leachate are added to the WWTP then these are included in Section 3.5 if applicable

Significance of Results:

The annual mean hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. The annual maximum hydraulic loading is less than the peak Treatment Plant Capacity as detailed further in Section 3.2. 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.

2.2 Discharges from the agglomeration

2.2.1 Effluent Monitoring Summary - ELPHIN WASTEWATER TREATMENT WORKS WWTP

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)
Total Phosphorus (as P) mg/l	0	0	0	24	0	0	0.11	Pass
Ammonia-Total (as N) mg/l	1	1.2	0	24	1	1	0.17	Fail
pH pH units	0	0	0	12	0	0	7.61	Pass
Suspended Solids mg/l	35	87.5	0	24	0	0	1.92	Pass
ortho-Phosphate (as P) - unspecified mg/l	0.5	0.6	0	24	0	0	0.07	Pass
Conductivity 20 C µS/cm	0	0	0	12	0	0	575	Pass
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	5	10	0	12	0	0	0.67	Pass
COD-Cr mg/l	125	250	0	24	0	0	12.04	Pass

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)
Total Nitrogen mg/l	0	0	0	12	0	0	5.48	Pass

Notes:
1– This represents the Emission Limit Values after the Interpretation provided for under Condition 2 of the licence is applied
2 - For parameters where a mean ELV applies

Cause of Exceedance(s):

Inadequate Operational Procedures

Significance of Results:

The WWTP is non compliant with the ELV's set in the Wastewater Discharge Licence.

2.3 Ambient monitoring summary

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.

2.3.1 Ambient Monitoring Report Summary - ELPHIN WASTEWATER TREATMENT WORKS WWTP

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	Code	Bathing Water	Drinking Water	FWPM	Shellfish	WFD Status
Downstream	188862, 288158	TPEFF2600D0230SW001	No	No	No	No	Good

2.3.2 Ambient Monitoring Parameter Summary - ELPHIN WASTEWATER TREATMENT WORKS WWTP

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 did not meet the required EQS.

The parameters which exceeded the EQS and may be causing an impact are: Ammonia, B.O.D, Ortho P.

The discharge from the wastewater treatment plant has an observable impact on the water quality.

A deterioration in water quality has been identified, however it is not know if it or is not caused by the WWTP.

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

Other Potential cause of deterioration in water quality relevant to this area are: The WWTP was non compliant with the ELV's set out in the wastewater discharge licence as there was an exceedance for Ammonia in July. There is no upstream monitoring point so it isn't possible to assess the impact from the plant on the WFD status. The Mean results failed for Ammonia and BOD and the 95%ile failed for Ammonia, BOD and Ortho P. Given that there is no upstream monitoring point specified in the Licence it is not possible to assess the impact from the WWTP.

3 OPERATIONAL REPORTS SUMMARY

3.1 Treatment Efficiency Report

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:

3.1.1 Treatment Efficiency Report Summary - ELPHIN WASTEWATER TREATMENT WORKS WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
COD	49807.5	2435.79	95.11	
TP	552.18	23.05	95.83	
SS	26916.21	388	98.56	
TN	3897.96	1121.16	71.24	
cBOD	20739.36	136.44	99.34	

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

3.2 Treatment Capacity Report Summary

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.

ELPHIN WASTEWATER TREATMENT WORKS WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	1425

ELPHIN WASTEWATER TREATMENT WORKS WWTP	
DWF to the Treatment Plant (m3/day)	432
Current Hydraulic Loading - annual max (m3/day)	1335
Average Hydraulic loading to the Treatment Plant (m3/day)	545
Organic Capacity (PE) - As Constructed	1900
Organic Capacity (PE) - Collected Load (peak week)	740
Organic Capacity (PE) - Remaining	1160
Will the capacity be exceeded in the next three years? (Yes/No)	No

3.3 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 is no Complaint data included in the AER.			

3.4 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.

3.4.1 Summary of Incidents

Incident Type	Cause	No. of incident occurrences	Recurring (Y/N)	Closed (Y/N)
Non-compliance	Inadequate Operational Procedures	1	No	No

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	1
Number of Incidents reported to the EPA via EDEN in 2018	1
Explanation of any discrepancies between the two numbers above	

3.5 Sludge / Other inputs to the 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.							

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:

No Appendix Included

4.1.1 SWO Identification

WWDL Name / Code for Storm Water Overflow	Irish 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 2018 (No. of events)	Total volume discharged in 2018 (m3)	Monitoring Status
SW0002	188081, 288414	Yes	Low	Meeting			Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	0.00
Is each SWO identified as non meeting DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO Assessment included the requirements of relevant of WWDL schedules?	Yes
Have the EPA been advised of any additional SWOs / charges 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)	Licence Schedule	Licence Completion Date	Date Expired? (N/NA/Y)	Status of Works	Timeframe for Completing the Work	Comments
Implement, requirements in accordance with Condition 5.5n	C	31/12/2019	No	Not Started		A desktop study for Condition 5 Assessment will be completed by Q4 2019
SW001 Primary Discharge Point to be discontinued	C	31/12/2019	No	Not Started		

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

4.2.2 Improvement Programme Summary

Improvement Identifier	Improvement Description	Improvement Source	Expected Completion Date	Comments
There are no Improvements 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 (e.g. Appendix X).
Priority Substances Assessment	Yes	2015	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
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	
Is there a need to request/advise the EPA of any modifications to the existing WWDL?	No
List reason e.g. changes to monitoring requirements	
Have these processes commenced?	No
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:

Signed: Date: 12/03/2019

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 ,

Eleanor Roche

Acting Head of Environmental Regulation.

7 APPENDIX

Appendix
Appendix 7.1 - Ambient monitoring summary

D0230-01 Elphin Agglomeration : - Ambient Monitoring Downstream 2018 – Elphin Stream – (26E02-0100 -DS Elphin Stw (Br Ese Elphin)									
Sample Type	**Date**	**code**	**Ammonia (mg/l)**	**BOD (mg/l)**	**Dissolved Oxygen (% Saturation)**	**pH (unit)**	**Temperature (deg C)**	**Ortho-p (PO4-P) (mg/l)**	**Total Nitrogen (mg/l)**
Downstream	4-Jan-2018	18440009	0.114	1.1	82.6	7.51	6.8	0.076	
Downstream	17-Apr-2018	18441264	0.437	3.5	88.1	7.14	10	0.22	
Downstream	4-July-2018	18442273	0.122	1.2	59.4	7.73	16.4	0.206	
Downstream	11-Oct-2018	18443568	0.133	< 1	51.8	7.61	13	0.146	
Ambient Monitoring Result (Mean)			0.2015	1.575	74.36	7.68	11.3	0.162	
Surface Water Regulation 2009 Good Status (mean) Table 9 (Note 1)			≤0.065	≤1.50		Soft 4.5 <pH<6.0 Hard 6.0<pH<9.0		≤0.035	
Ambient Monitoring Result (95 Percentile)			0.3914	3.155	87.55	7.708	15.76	0.2179	
Surface Water Regulation 2009 Good Status			≤0.14	≤2.6	80<95%ile<120			≤0.075	
Status Upstream (Note 3)			Fail	Fail	Good	Hard		Fail	

Note 1: Limit (mean) for good status waters as per Table 9, Part A, schedule 4 of the European Communities Environmental Objectives (Surface Water) Regulations, 2009 S.I. No. 272 of 2009. Note – calculated figures for Ammonia as N do not consider variants in temperature or pH.

Note 2: Limit (95%ile) for good status waters as per Table 9, Part A, Schedule 4 of The European Communities Environmental Objectives (Surface Water) Regulations, 2009) S.I. No. 272 of 2009.

Note 3: Limit (mean) for good status waters as per Table 9, Part A, Schedule 4 of The European Communities Environmental Objectives (Surface Water) Regulations, 2009) S.I. No. 272 of 2009.