Annual Environmental Report

2018

Convoy

D0344-01

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Revision Number	Description of Change	Author(s)	Approved By	Date of Approval
1	Table 1.3.1	M. O'Reilly	M. O'Reilly	04/11/2019

1 EXECUTIVE SUMMARY AND INTRODUCTION TO THE 2018 AER

This Annual Environmental Report has been prepared for D0344-01, Convoy, in Donegal 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
There is no Licence Specific Reports included in this AER.	

1.2 Treatment Type

The agglomeration is served by a wastewater treatment plant Convoy WWTP with a Plant Capacity PE of 1050. The treatment process includes the following:

1.2.1 Convoy WWTP

Treatment type	Yes / No	Details
Preliminary Treatment	Yes	Automatic Screen/Grit removal
Primary Treatment	Yes	Imhoff Tank
Secondary Treatment	No	
Nutrient Removal	No	
Tertiary Treatment	Yes	

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 Convoy WWTP

Compliance Status	
Were all parameters compliant for Convoy WWTP treatment plant	No
Where non-compliant 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
Convoy WWTP	Liquid Sludge	1319.94	Weight (Tonnes)	0	Letterkenny Sludge Centre

Annual Statement of Measures

DB Upgrade works to WWTP completed and commissioned late 2018. DBO Contractor operating plant for 7 year operational period.

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 - Convoy WWTP

Parameters	Number of Samples	Annual Max	Annual Mean
COD-Cr mg/l	12	400	206.3
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	12	197	108.54
Total Phosphorus (as P) mg/l	2	3.03	2.34
Suspended Solids mg/l	12	277	142.48
Total Nitrogen mg/l	2	31.5	25.41
Hydraulic Capacity	0	2981	1421

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

2.2 Discharges from the agglomeration

The primary discharge between January and the end of April 2018 was SW001 and the primary discharge between May and December 2018 was SW004. In accordance with Appendix A.1.1 in the WWDL, SW001 has been assessed against the interim percentage reduction from influent concentration. Similarly, SW004 has been assessed against the ELV's specified in Appendix A.1.2 in the WWDL.

2.2.1 Effluent Monitoring Summary - Convoy WWTP (SW001)

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)
Conductivity 20 C µS/cm	0	0	0	4	0	0	N/A	
Suspended Solids mg/l	0	0	50	4	3	3	118.75	Fail
Orthophosphate (MRP) filtered (As P) mg/l	0	0	0	4	0	0	0.57	
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	0	0	20	4	1	1	56	Fail
pH pH units	0	0	0	4	0	0	7.325	
COD-Cr mg/l	0	0	0	4	0	0	129.25	
Ammonia-Total (as N) mg/l	0	0	0	4	0	0	11.40	

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 treatment.

Significance of Results:

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

2.2.2 Effluent Monitoring Summary - Convoy WWTP (SW004)

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)
Conductivity 20 C µS/cm	0	0	0	8	0	0	N/A	
Suspended Solids mg/l	35	87.5	0	8	0	0	4.125	Pass
Orthophosphate (MRP) filtered (As P) mg/l	1	1	0	0	0	0	0	Not Measured
BOD, 5 days with Inhibition (Carbonaceous BOD) mg/l	25	50	0	8	0	0	2.25	Pass
pH pH units	6-9	6-9	0	8	0	0	7.5	Pass
COD-Cr mg/l	125	250	0	8	0	0	25.38	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)
Ammonia-Total (as N) mg/l	4	4	0	8	0	0	0.29	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):

Not Applicable.

Significance of Results:

Since the commissioning of the upgraded infrastructure in 2018, the WWTP is compliant with the ELV's set in the Wastewater Discharge Licence between May and December. However, over the course of the year when the discharge from SW001 is included, the WWTP is non-compliant with the ELV's set in the Wastewater Discharge Licence. The results from SW004 indicate the discharge is currently being treated adequately within the ELV's in the WWDL.

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 - Convoy 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
Upstream	222245, 401274	TPEFF0600D0344SW001	No	No	No	No	Poor

Downstream	222344, 401226	TPEFF0600D0344SW001	No	No	No	No	Poor

2.3.2 Ambient Monitoring Parameter Summary - Convoy WWTP

The table below provides a summary of monitoring results for designated ambient monitoring points. The upstream and downstream annual mean values are shown (mg/l), and the difference between both monitoring stations is given as a percentage of the Environmental Quality Standard (EQS) where relevant.

Parameter Name	Upstream Monitoring Point Location	Upstream Monitoring Point Annual Mean	Downstream Monitoring Point Location	Downstream Monitoring Point Annual Mean	EQS	% of EQS
Temperature °C	RS01D010404	9.68	RS01D010410	8.58		
Suspended Solids mg/l	RS01D010404	3	RS01D010410			
pH pH units	RS01D010404	7.75	RS01D010410	7.58		
BOD - 5 days (Total) mg/l	RS01D010404	1.38	RS01D010410	1.26	2.6	-4.4
Orthophosphate (MRP) filtered (As P) mg/l	RS01D010404	0.03	RS01D010410			
Dissolved Oxygen % Saturation	RS01D010404	99.54	RS01D010410	99.6		
Total Nitrogen mg/l	RS01D010404	1.04	RS01D010410			
Ammonia-Total (as N) mg/l	RS01D010404	0.05	RS01D010410	0.05	2.6	0.1
Conductivity 20 C µS/cm	RS01D010404	238.88	RS01D010410			

Significance of Results:

The WWTP discharge was not compliant with the ELV's set in the wastewater discharge licence.

The parameters which exceeded the EQS and may be causing an effect is: The following parameters presented an increase on the downstream in comparison with the upstream results on a number of occasion - DO, BOD & Total Nitrogen.

Any other known impacts: Unknown.

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 - Convoy WWTP

Parameter	Influent mass loading (kg/year)	Effluent mass emission (kg/year)	Efficiency (% reduction of influent load)	Comment
TN	8088.58			
TP	746.01			
SS	43135.24	15366.04	64.38	
cBOD	32858.52	7027.83	78.61	
COD	62455.52	18771.07	69.94	

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.

Convoy WWTP	
Peak Hydraulic Capacity (m3/day) - As Constructed	875
DWF to the Treatment Plant (m3/day)	875
Current Hydraulic Loading - annual max (m3/day)	2981
Average Hydraulic loading to the Treatment Plant (m3/day)	1421
Organic Capacity (PE) - As Constructed	1050
Organic Capacity (PE) - Collected Load (peak week)	1528
Organic Capacity (PE) - Remaining	0
Will the capacity be exceeded in the next three years? (Yes/No)	Yes

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
2	Blocked Sewer	0	2

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	WWTP operating above capacity	4	Yes	Yes
Non-compliance	Inadequate Operational Procedures	1	No	Yes

3.4.2 Summary of Overall Incidents

Question	Answer
Number of Incidents in 2018	5
Number of Incidents reported to the EPA via EDEN in 2018	5
Explanation of any discrepancies between the two numbers above	None

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)?[3]	Is there a leachate/sludge acceptance procedure for the WWTP?	Is there a dedicated leachate/sludge acceptance facility for the WWTP?[2](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
SW002	222309, 401251	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored
SW003	222183, 401330	Yes	High	Not Meeting	Unknown	Unknown	Not Monitored

4.1.2 Inspection Summary Report

SWO Summary	
How much sewage was discharged via SWOs in the agglomeration in the year (m3)?	Unknown
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?	No
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
SW001 Primary Discharge Point Convert to Storm Water overflow	C	31/12/2015	Yes	Not Started	31/Dec/2021	
Upgrade of storm water overflow (associated with discharge point SW001/SW005) to comply with the criteria outlined in the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows' (1995)	C	31/12/2015	Yes	Not Started	31/Dec/2021	
Upgrade of storm water overflow (associated with discharge point SW002) to comply with the criteria outlined in the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows' (1995)	C	31/12/2015	Yes	Not Started	31/Dec/2021	
Upgrade of storm water overflow (associated with discharge point SW003) to comply with the criteria outlined in the DoECLG 'Procedures and Criteria in relation to Storm Water Overflows' (1995)	C	31/12/2015	Yes	Not Started	31/Dec/2021	
WWTP upgrade to provide secondary treatment	C	31/12/2015	Yes	Not Started	31/Dec/2021	

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	Appendix 7.5
Small Stream Risk Score Assessment	Yes	2016	No	Summary in Section 5.7. Results not appended

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	Not Applicable
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	Not Applicable
Have these processes commenced?	No
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER	No

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

Signed: Date: 01/07/2019

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

In the appendix include all the detailed or site-specific reports that are relevant to the AER. Reports omitted from previous AERs should also be appended here.

Appendix
Appendix 7.1 - Ambient monitoring summary

Municiple	Entity Name	Month	Location	Lab Ref	Date	pH	Temperature	Conductivity @ 20°C	DO	BOD	COD	Suspended Solids	Ammonia (as N)	Nitrate (as N)	Nitrite (as N)	Orthophosphate	Total Nitrogen	TON	Total Phosphorus	E coli	Faecal Coliforms (E. coli)	Enterococci	SSRS	DIN
District						pH units	°C	us/cm	% Sat	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	(mg/l)	MPN/100mls	MPN/100mls	cfu/100mls	Rating	(mg/l)
Stranorlar	Deele	January	Convoy - Upstream	182500056	17-Jan-2018	7.4	2.7	238	98.5	2	NT	< 6	0.16	NT	NT	0.03	2.2	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	February	Convoy - Upstream	182500301	7-Feb-2018	7.6	2.5	276	99	2	NT	< 6	0.101	NT	NT	< 0.05	1.3	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	March	Convoy - Upstream	182500793	14-Mar-2018	7.9	6.3	252	99.3	1	NT	< 6	< 0.015	NT	NT	< 0.05	1.07	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	April	Convoy - upstream	182501242	19-Apr-2018	8	11	226	103	2	NT	< 6	0.037	NT	NT	< 0.05	0.99	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	May	Convoy - Upstream	182501565	17-May-2018	8	11.3	295	109.7	1	NT	< 6	< 0.015	NT	NT	< 0.05	< 1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	June	Convoy - Upstream	182502003	19-June-2018	7.7	11	193	100.6	2	NT	< 6	0.033	NT	NT	< 0.05	< 1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	July	Convoy - Upstream	182502682	24-Jul-18	8	16.3	244	95.2	1	NT	<6	0.055	NT	NT	<0.15	0.73	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	August	Convoy - Upstream	182503003	21-Aug-18	7.4	14.4	158	95.7	1	NT	<6	0.02	NT	NT	<0.05	<1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	September	Convoy - Upstream	182503639	27-Sep-18	7.7	12.9	222	95.9	1	NT	<6	<0.015	NT	NT	<0.05	1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	October	Convoy - Upstream	182504000	19-Oct-18	7.7	9.2	252	96.9	1	NT	<6	0.023	NT	NT	<0.05	<1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	October	Convoy - Upstream	182504202	25-Oct-18	NT	10.4	NT	94.2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<6.5	NT
Stranorlar	Deele	November	Convoy - Upstream	182504447	20-Nov-18	7.9	7.3	285	102.5	1	NT	<6	0.035	NT	NT	<0.05	<1	NT	NT	NT	NT	NT	NT	NT
					Average	7.75	9.61	240.09	99.21	1.36		6.00	0.05			0.06	1.12							
					Max	8	16.3	295	109.7	2		6	0.16			0.15	2.2							
Stranorlar	Deele	January	Convoy - Downstream	182500059	17-Jan-2018	7.4	2.7	237	98.4	2	NT	10	0.17	NT	NT	0.05	4.1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	February	Convoy - Downstream	182500304	7-Feb-2018	7.7	2.7	286	98	2	NT	< 6	0.139	NT	NT	< 0.05	1.5	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	March	Convoy - Downstream	182500796	14-Mar-2018	7.9	6.6	253	98.4	1	NT	< 6	< 0.015	NT	NT	< 0.05	1.03	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	April	Convoy - Downstream	182501245	19-Apr-2018	7.8	11.2	229	101	1	NT	< 6	0.017	NT	NT	< 0.05	1.1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	May	Convoy - Downstream	182501568	17-May-2018	8.2	12	296	122.1	1	NT	< 6	< 0.015	NT	NT	< 0.05	< 1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	June	Convoy - Downstream	182502006	19-June-2018	7.7	11	198	97.7	3	NT	< 6	0.03	NT	NT	< 0.05	< 1	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	July	Convoy - Downstream	182502685	24-Jul-18	8.1	16.3	249	103.8	<1	NT	<6	<0.015	NT	NT	<0.15	0.6	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	August	Convoy - Downstream	182503006	21-Aug-18	7.6	14.7	162	95.5	1	NT	<6	0.019	NT	NT	<0.05	1.04	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	September	Convoy - Downstream	182503642	27-Sep-18	7.8	12.8	223	95.5	<1	NT	<6	0.015	NT	NT	<0.05	1.11	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	October	Convoy - Downstream	182504003	19-Oct-18	7.7	9.2	266	96.2	1	NT	<6	0.02	NT	NT	<0.05	1.01	NT	NT	NT	NT	NT	NT	NT
Stranorlar	Deele	October	Convoy - Downstream	182504203	25-Oct-18	NT	10.1	NT	92.2	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	<6.5	NT
Stranorlar	Deele	November	Convoy - Downstream	182504450	20-Nov-18	7.7	7.4	300	101.7	1	NT	<6	0.027	NT	NT	<0.05	1.21	NT	NT	NT	NT	NT	NT	NT
					Average	7.78	9.73	245.36	100.04	1.36		6.36	0.04			0.06	1.34							
					Max	8.2	16.3	300	122.1	3		10	0.17			0.15	4.1							

M.O'Neill
Central laboratory
Letterkenny