

Annual Environmental Report 2015

Agglomeration Name:	Athboy
Licence Register No.	D0124-01



Table of Contents

Section 1. Executive Summary and Introduction to the 2015 AER	3
1.1 Summary Report on 2015	3
Section 2. Monitoring Reports Summary	4
2.1 Summary report on monthly influent monitoring	4
2.2 Discharges from the agglomeration	5
2.3. Ambient Monitoring Summary	6
2.4 Data collection and reporting requirements under the UWWTD	7
2.5 Pollutant Release and Transfer Register (PRTR) - report for previous year	7
Section 3. Operational Reports Summary	8
3.1 Treatment Efficiency Report	8
Table 3.1 Treatment Efficiency Report Summary	8
3.2 Treatment Capacity Report	8
3.3 Extent of Agglomeration Summary Report	8
3.4 Complaints Summary	9
3.5 Reported Incidents Summary	10
3.6 Sludge / Other inputs to the WWTP	11
Section 4. Infrastructure Assessments and Programme of Improvements	12
4.1 Storm water overflow identification and inspection report	12
4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.	13
Section 5. Licence Specific Reports	15
5.1 Priority Substances Assessment	16
5.2 Drinking Water Abstraction Point Risk Assessment	16
Section 6. Certification and Sign Off	18
Section 7. Appendix	19

Section 1. Executive Summary and Introduction to the 2015 AER

1.1 Summary Report on 2015

This Annual Environmental Report has been prepared for D0124-01, Athboy, Rathcairn and their Environs, in County Meath, in accordance with the requirements of the wastewater discharge licence for the agglomeration.

Specified assessments are included as an appendix to the AER as follows:

- Storm water overflow assessment
- Priority substances assessment

The agglomeration is served by a wastewater treatment plant with a Design PE of 5,800.

The treatment process includes the following:-

- Preliminary Treatment (Screening)
- Secondary Treatment (SBR)
- Chemical dosing for phosphorous removal (Ferric Sulphate)

The final effluent from the Primary Discharge Point was compliant with the Emission Limit Values in 2015.

84,992kgs sludge as dry solids was removed from the wastewater treatment plant in 2015 as dewatered sludge cake. Sludge was transferred to Kells.

There were no major capital or operational changes undertaken in 2015.

An Annual Statement of Measures is included in the Appendix 7.1.

Section 2. Monitoring Reports Summary

2.1 Summary report on monthly influent monitoring

Table 2.1 Influent Monitoring Summary

2.1.1 Monthly Influent Monitoring	BOD (mg / l)	COD (mg / l)	SS (mg / l)	TP (mg / l)	TN (mg / l)	Hydraulic Loading (m ³ /d)	Organic Loading (PE/Day)
Number of Samples	12	12	12	12	12		
Annual Max.	268.5	639	534	8.17	55.2	4,672	5,416
Annual Mean	121.06	227.29	148.83	3.20	23.89	1,316	2,404

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 greater than the peak Treatment Plant Capacity as detailed further in Section 3.2.

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

The annual maximum organic loading is less than the 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

Table 2.2 - Effluent Monitoring

2.2.1 Effluent Monitoring Summary	BOD (mg/l)	COD (mg/l)	TSS (mg/l)	Total P (mg/l)	Ortho P (mg/l)	Ammonia as N (mg/l)	Comment
WWDL ELV (Schedule A) where applicable	20	125	35	1	0.6	1.1	
ELV with Condition 2 Interpretation included	40	250	87.5	1.2	1.2	2.2	
Number of sample results	12	12	12	12	12	12	
Number of sample results above WWDL ELV	0	0	0	0	0	0	
Number of sample results above ELV with Condition 2 Interpretation	0	0	0	0	0	0	
Annual Mean (for parameters where a mean ELV applies)	1.44	14.97	1.30	0.24	0.21	0.04	
Overall Compliance (Pass/Fail)	Pass	Pass	Pass	Pass	Pass	Pass	

Significance of results

The WWTP was compliant with the ELV's set in the wastewater discharge licence. The impact on receiving waters is assessed further in Section 2.3.

2.3. Ambient Monitoring Summary

Table 2.3 - Ambient Monitoring Report Summary

Ambient Monitoring Point from WWDL (or as agreed with EPA)	Irish Grid Reference	EPA Feature Coding Tool code	Receiving Waters Designation (Y/N)				WFD Status	Does assessment of the ambient monitoring results indicate that the discharge is impacting on water quality?
			Bathing Water	Drinking Water	FWPM	Shellfish		
Upstream monitoring point	271818E 264149N	aSW-1U	n/a	n/a	n/a	n/a	Moderate	n/a
Downstream monitoring point	272512E 263247N	aSW-1D	N	Y	N	N	Moderate	No

The results for the upstream and downstream monitoring are included in the Appendix 7.2.

Significance of results

- The WWTP was compliant with the ELVs set in the wastewater discharge licence as detailed in Section 2.2
- The discharge from the wastewater plant does not have an observable negative impact on the water quality status.
- The discharge from the wastewater treatment plant does / doesn't have an observable negative impact on the Water Framework Directive status.
- In terms of the drinking water abstractions downstream of the discharge there is no evidence to suggest that discharge from Athboy is having an impact on these abstractions.

2.4 Data collection and reporting requirements under the UWWTD

The electronic submission of data was completed In January 2016.

2.5 Pollutant Release and Transfer Register (PRTR) - report for previous year

A PRTR is not required for this 2015 AER.

Section 3. Operational Reports Summary

3.1 Treatment Efficiency Report

Table 3.1 Treatment Efficiency Report Summary

	cBOD (kg/yr)	COD (kg/yr)	SS (kg/yr)	Total P (kg/yr)	Total N (kg/yr)
Influent mass loading (kg/year)	52,647	98,847	64,725	1,391	10,391
Effluent mass emission (kg/year)	534	5,019	462	84	2,927
% Efficiency (% reduction of influent load)	99%	95%	99%	94%	72%

3.2 Treatment Capacity Report

Table 3.2 - Treatment Capacity Report Summary

Hydraulic Capacity – Design / As Constructed (dry weather flow) (m3/year)	476,325
Hydraulic Capacity – Design / As Constructed (peak flow) (m3/year)	1,428,975
Hydraulic Capacity – Current loading (m3/year)	480,408
Hydraulic Capacity – Remaining (m3/year)	948,567
Organic Capacity - Design / As Constructed (PE)	5,800
Organic Capacity - Current loading (PE)	2,404
Organic Capacity – Remaining (PE)	3,396
Will the capacity be exceeded in the next three years? (Yes / No)	No
Is an upgrade or expansion of the WWTP proposed? (Yes/No)	No

3.3 Extent of Agglomeration Summary Report

In this section Irish Water is required to report on the amount of urban waste water generated within the agglomeration. It does not include any waste water collected and created in a private system and discharged to water under a Section 4 Licence issued under the Water Pollution Acts 1977 (as amended).

Table 3.3 - Extent of Agglomeration Summary Report

	% of total load generated in the agglomeration
Load generated in the agglomeration that is collected in the sewer network	100%
Load collected in the agglomerations that enters treatment plant	95%
Load collected in the sewer network but discharges without treatment	5%

Load generated in the agglomeration that is collected in the sewer network is the total load generated and collected in the municipal network within the boundary of the agglomeration.

Load collected in the agglomerations that enters treatment plant is that portion of the previous figure which enters the waste water treatment plant.

Load collected but discharged without treatment is that portion of the first figure which is discharged without treatment.

The data in Table 3.3 is estimated based on influent monitoring as detailed in Section 2.1 above.

3.4 Complaints Summary

A summary of complaints of an environmental nature is included below.

Table 3.4 - Complaints Summary Table

Number	Date & Time	Nature of Complaint	Cause of Complaint	Actions taken to resolve issue	Closed (Y/N)
7274462 605	07/01/2015 11:19:00	Below Ground Waste Investigation Blockage	Shop and the premises is being affected by a sewage blockage that's over spilling onto the footpath and around the property, the waste is forming on the road and cars are driving through.	Blockage Cleared	Yes
7070335 000	23/03/2015 09:47:00	Below Ground Waste Investigation Sewage Flooding	Sewerage overflow at a property rising from the manhole in the back yard.	Blockage Cleared	Yes
2107059 875	08/06/2015 09:56:00	Below Ground Waste Investigation Blockage	Customer called that two manholes in over flowed into her garden.	Blockage Cleared	Yes

3.5 Reported Incidents Summary

A summary of reported incidents is included below.

Table 3.5.1 - Summary of Incidents

3.5.1 Incident Type (e.g. Non-compliance, Emission, spillage, pollution incident)	Incident Description	Cause	No. of Incidents	Corrective Action	Authorities Contacted. Note 1	Reported to EPA (Yes/No)	Closed (Yes/No)
No incidents were recorded in 2015							

Note 1: For shellfish waters notify the Marine Institute (MI) Sea Fisheries Protection Authority (SFPA) Food Safety Authority (FSAI) and An Bord Iascaigh Mhara (BIM). This should also include any other authorities that should be contacted arising from the findings of any Licence Specific Reports also e.g. Drinking Water Abstraction Impact Risk Assessment, Fresh Water Pearl Mussel Impact Assessments etc.

Table 3.5.2 - Summary of Overall Incidents

Number of Incidents in 2015	0
Number of Incidents reported to the EPA via EDEN in 2015	0
Explanation of any discrepancies between the two numbers above	N/A

3.6 Sludge / Other inputs to the WWTP

There are no Other inputs to the waste water treatment plant.

Table 3.6 - Other Inputs

Input Type	m ³ /year	PE/year	% of load to WWTP	Is there a leachate/sludge acceptance procedure for the WWTP? (Y/N)	Is there a dedicated leachate/sludge acceptance facility for the WWTP? (Y/N)
Domestic /Septic Tank Sludge	0	0	0.00%	N	N
Industrial / Commercial Sludge	0	0	0.00%	N	N
Landfill Leachate (delivered by tanker)	0	0	0.00%	N	N
Landfill Leachate (delivered by sewer network)	0	0	0.00%	N	N
Other (specify)	0	0	0.00%	N	N

Notes:

1. Other Inputs include; septic tank sludge, industrial /commercial sludge, landfill leachate and any other sludge that is collected and added to the treatment plant.
2. Sludge that is added to a dedicated sludge reception facility at a waste water treatment plant not include d in Table 3.6. Only include sludge which is added to the waste water treatment process stream. Enter zero where there are no inputs.

Section 4. Infrastructure Assessments and Programme of Improvements

4.1 Storm water overflow identification and inspection report

The Storm Water Overflow Identification & Inspection report is included in Appendix 7.3. A summary of the significance and operation is included below.

Table 4.1.1 - SWO Identification and Inspection Summary Report

WWDL Name / Code for Storm Water Overflow	Irish Grid Ref.	Included in Schedule A4 of the WWDL	Significance of the overflow (High/Med/Low)	Compliance with DoEHLG criteria	No. of times activated in 2015 (No. of events)	Total volume discharged in 2015 (m ³)	Total volume discharged in 2015 (P.E.)	Estimated / Measured data
SW-2	272048, 263611	Yes	Low	Compliant	3	24,020	96	Estimated
Athboy Pumping Station	272048, 263611	Yes	Low	Compliant	Unknown	Unknown	Unknown	Estimated

Table 4.1.2 - SWO Identification and Inspection Summary Report

How much sewage was discharged via SWOs in the agglomeration in the year (m ³ /yr)?	24,020
How much sewage was discharged via SWOs in the agglomeration in the year (p.e.)?	96
What % of the total volume of sewage generated in the agglomeration was discharged via SWOs in the agglomeration in 2015?	5%
Is each SWO identified as non-compliant with DoEHLG Guidance included in the Programme of Improvements?	Yes
The SWO assessment includes the requirements of relevant WWDL Schedules (Yes/No)	Yes
Have the EPA been advised of any additional SWOs / changes to Schedules A/C under Condition 1?	No

4.2 Report on progress made and proposals being developed to meet the improvement programme requirements.

No Improvement Programme Report is required for this 2015 AER.

Table 4.2.1 - Specified Improvement Programme Summary

Specified Improvement Programmes	Licence Schedule	Licence Completion Date	Date Expired	Status of Works	% Construction Work Completed	Licensee Timeframe for Completing the Work	Comments
Wastewater Treatment plant construction and ancillary works	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Athboy Pumping Station (main)	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA1	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA2 (main)	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA3	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed
Rathcairn Pumping Station RA4	C	30th June 2015	Yes	(v)Completed	100%	N/A	Completed

There are no improvements identified by under Condition 5.2 is included below.

Table 4.2.2 - Improvement Programme Summary

Improvement Identifier / Name	Improvement Description	Improvement Source	Progress (% complete)	Expected Completion Date	Comments
N/A	N/A	WWTP assessment (Condition 5.2).	N/A	N/A	No licence requirements
N/A	N/A	Sewer Integrity Tool (Condition 5.2).	N/A	N/A	No licence requirements
N/A	N/A	Secondary discharges assessment	N/A	N/A	No licence requirements

		(Condition 5.2).			
N/A	N/A	SWO assessment (Condition 4 & 5.2).	N/A	N/A	No licence requirements
N/A	N/A	Pearl Mussel Impact Assessment (Condition 4)	N/A	N/A	No licence requirements
N/A	N/A	Improved Operational Control	N/A	N/A	No licence requirements

Table 4.2.3 - Sewer Integrity Risk Assessment Tool Summary

The Improvement Programme should include an assessment of the integrity of the existing wastewater works for the following:	Risk Assessment Rating (High, Medium, Low)	Risk Assessment Score	Comment
Hydraulic Risk Assessment Score	Medium	67	2014 AER Appendix 7.6
Environmental Risk Assessment Score	Low	130	2014 AER Appendix 7.6
Structural Risk Assessment Score	Medium	65	2014 AER Appendix 7.6
Operation & Maintenance Risk Assessment Score	Low	30	2014 AER Appendix 7.6
Overall Risk Score for the agglomeration	Low	292	2014 AER Appendix 7.6

Section 5. Licence Specific Reports

Licence Specific Reports Summary Table

Licence Specific Report	Required in this AER or outstanding from previous AER	Included in this AER / Remains outstanding	Reference to previous AER containing report or relevant section of this AER
Priority Substances Assessment	Yes	Yes	See Appendix 7.4
Drinking Water Abstraction Point Risk Assessment	No	No	See 2011 AER
Habitats Impact Assessment	N/A		N/A
Shellfish Impact Assessment	N/A		N/A
Pearl Mussel Report	N/A		N/A
Toxicity/Leachate Management	N/A		N/A
Toxicity of Final Effluent Report	N/A		N/A

Licence Specific Reports Summary of Findings

Licence Specific Report	Recommendations in Report	Summary of Recommendations in Report	Status of Recommendations
Priority Substances Assessment	None	N/A	N/A
Drinking Water Abstraction Point Risk Assessment	None	N/A	N/A
Shellfish Impact Assessment	N/A		
Pearl Mussel Report	N/A		
Toxicity/Leachate Management	N/A		
Toxicity of Final Effluent Report	N/A		
Habitats Impact Assessment	N/A		

5.1 Priority Substances Assessment

The Priority Substances Assessment report is included in Appendix 7.4. A summary of the findings of this report is included below.

	Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.
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	Desktop Study
Does the assessment include a review of Trade inputs to the works?	N/A
Does the assessment include a review of other inputs to the works?	N/A
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

5.2 Drinking Water Abstraction Point Risk Assessment

The Drinking Water Abstraction Point Risk Assessment report is included in 2011 AER. A summary of the findings of this report is included below.

Table 5.2 - Drinking Water Abstraction Point Risk Assessment Summary

	<i>Licensee self- assessment checks to determine whether all relevant information is included in the Assessment.</i>
Is a Drinking Water Abstraction Risk Assessment required in the AER (or outstanding from a previous AER)	No
Does the Drinking Water Abstraction Risk Assessment identify whether any of the discharges in Schedule A of the licence pose a risk to a drinking water abstraction	No
Does the assessment identify if any other discharge(s) from the works pose a risk to a drinking water abstraction (includes emergency overflows)	No
What is the overall risk ranking applied by the licensee	L
Does the risk assessment consider the impacts of normal operation	Yes
Does the risk assessment consider the impacts of abnormal operation (e.g. incidents /overflows)	Yes

Does the risk assessment include control measures for each risk identified	Yes
Does the risk assessment consider operational control measures e.g.: waste water incident notification to drinking water abstraction operator	Yes
Does the risk assessment include infrastructural control measures	Yes
Does the Improvement Programme for the agglomeration include control measures / corrective actions to eliminate / reduce priority substances identified as having an impact on receiving water quality?	No

Section 6. Certification and Sign Off

Table 6.1 - Summary of AER Contents

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 modifications to the existing WWDL? Refer to Condition 1.7 (changes to works/discharges) & Condition 4 (changes to monitoring location, frequency etc.)	No
List reason e.g. failure to complete specified works within dates specified in the licence, changes to monitoring requirements	N/A
Have these processes commenced? (i.e. Request for Technical Amendment / Licence Review / Change Request)	N/A
Are all outstanding reports and assessments from previous AERs included as an appendix to this AER?	N/A
List outstanding reports	N/A

Declaration by Irish Water

The AER contains the following:

- Introduction and background to 2015 AER.
- Monitoring Reports Summary.
- Operational Reports Summary.
- Infrastructural Assessment and Programme of Improvements.
- Licence specific reports
- Certification and Sign Off
- Appendices

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

Signed: 
Gerry Galvin
Chief Technical Advisor

Date: 10/02/2016

Section 7. Appendix

Appendix 7.1 - Annual Statement of Measures

Appendix 7.2 - Ambient monitoring summary

Appendix 7.3 - Storm water overflow identification and inspection report

Appendix 7.4 - Priority substances assessment

Appendix 7.1

Annual Statement of Measures

No additional measures have been taken in 2015 in relation to the prevention of environmental damage. The need for measures to prevent environmental damage will be reviewed on an annual basis.

Appendix 7.2

Ambient Monitoring Summary

Kilmainhamwood Ambient Monitoring		NH4 (mg/l)	Ortho P (mg/l)	D.O (mg/l)	D.O (% Sat)	pH	BOD (mg/l)	Total N (mg/l)
04/06/2015	U/S	0.028	0.045	10.71	113.4%	8.21	2	1.09
	D/S	0.02	0.042	10.43	110.1%	8.25	1.57	0.974
30/06/2015	U/S	0.026	0.037	9.83	115.2%	8.3	1.16	1.47
	D/S	0.02	0.046	9.04	107.3%	8.32	1.02	1.49
14/07/2015	U/S	0.023	0.051	10.37		8.11	1.96	1.83
	D/S	0.024	0.079	9.94		8.15	1.4	2.01
12/08/2015	U/S	0.031	0.048	10.34	111.8%	8.08	1.48	1.65
	D/S	0.029	0.046	10.45	111.4%	8.19	1.37	1.43
13/08/2015	U/S	0.029	0.054	9.84	109.2%	7.74	1.78	-
	D/S	0.028	0.053	9.87	109.5%	7.78	1.77	-
30/09/2015	U/S	0.001	0.024	11.8		7.99	1.23	1.37
	D/S	0.003	0.023	11.7		8.07	1.38	1.26
12/10/2015	U/S	0.051	0.022	11.3		8.1	1.85	1.31
	D/S	0.005	0.009	11.6		8.2	1.84	1.11

Appendix 7.3

Storm Water Overflow Identification and Inspection Report

NAME OF RECEIVING WATER: Athboy River		GIS CO -ORDINATES OF DISCHARGE: E272048,N263611
DISCHARGE POINT CODE: SW-2		PHOTOGRAPHS TAKEN: NO VIDEO TAKEN: NO
	Yes/No/N/A	COMMENTS
14.1 Was there evidence of the operation of the storm water overflow?	No	
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?	No	
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?	Yes	
14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?	No	Visual inspection of river showed no indications of any visual impact.
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?	Yes	Please refer to Appendix 7.2 ambient monitoring results for the Athboy River
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?	N/A	
14.7 Does the SWO operate in dry weather?	No	
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?	No	As per comment at 14.4 above.

NAME OF RECEIVING WATER: Athboy River		GIS CO -ORDINATES OF DISCHARGE: E272048,N263611
DISCHARGE POINT CODE: Athboy Pumping Station		PHOTOGRAPHS TAKEN: NO VIDEO TAKEN: NO
	Yes/No/N/A	COMMENTS
14.1 Was there evidence of the operation of the storm water overflow?	No	
14.2 Is there a system in place to monitor the frequency of the operation of the SWO?	No	
14.3 Is the SWO operating according to the criteria specified in the Procedures and Criteria in relation to Storm Water Overflows?	Yes	
14.4 Is the SWO causing significant visual/aesthetic impact or resulting in public complaints?	No	Visual inspection of river showed no indications of any visual impact.
14.5 Have the local authority evaluated whether there is deterioration in the water quality of the receiving water due to the operation of the SWO?	Yes	Please refer to Appendix 7.2 ambient monitoring results for the Athboy River
14.6 Have the local authority evaluated whether the SWO gives rise to failure to meet the requirements of national Regulations (for example, the Bathing Water Regulations)?	N/A	
14.7 Does the SWO operate in dry weather?	No	
14.8 Was there evidence of gross solids or litter in the receiving water associated with the SWO discharge resulting in an impairment of, or an interference with, amenities or the environment?	No	As per comment at 14.4 above.

DISCHARGE POINT CODE: SW-2

Formula A	$= \text{DWF} + 1.36P + 2E$
Domestic PE	$= 5,800 \times 0.8$
	$= 4,640$
Industrial PE	$= 5,800 \times 0.2$
	$= 1,160$
P = design domestic population at SW002	$= 5,800 \text{ pe}$
E = design industrial effluent flow at SW002	$= (1,160 \text{ pe} \times 0.225 \text{ l/pe/d})$
	$= 261 \text{ m}^3/\text{day}$
DWF	$= 5,800 \times 0.225 \text{ l/pe/d}$
	$= 1,305 \text{ m}^3/\text{day}$
Formula A	$= \text{DWF} + 1.36P + 2E$
	$= 1,305 + (1.36 \times 5,800) + (2 \times 261)$
	$= 225 + 1,088 + 90$
	$= 9,715 \text{ m}^3/\text{day}$

The storm tank at Athboy has a capacity of $1,100 \text{ m}^3$. At formula A flow the storm tanks give 2.71 hours retention time.

The forward two feed pumps in the inlet chamber at Athboy are capable of delivering a combined $600 \text{ m}^3/\text{hr}$. Formula A flow is calculated at $404.79 \text{ m}^3/\text{hr}$. The forward feed pumps are capable of formula 'A' flow into treatment.

Therefore SW002 is fully compliant with the DoEHLG "Procedures and Criteria for Storm Water Overflows", 1995.

DISCHARGE POINT CODE: Athboy Pumping Station

$$\text{Formula A} = \text{DWF} + 1.36P + 2E$$

$$\text{Domestic PE} = 5,800 \times 0.8$$

$$= 4,640$$

$$\text{Industrial PE} = 5,800 \times 0.2$$

$$= 1,160$$

$$P = \text{design domestic population at SW002} = 5,800 \text{ pe}$$

$$E = \text{design industrial effluent flow at SW002} = (1,160 \text{ pe} \times 0.225 \text{ l/pe/d})$$

$$= 261 \text{ m}^3/\text{day}$$

$$\text{DWF} = 5,800 \times 0.225 \text{ l/pe/d}$$

$$= 1,305 \text{ m}^3/\text{day}$$

$$\text{Formula A} = \text{DWF} + 1.36P + 2E$$

$$= 1,305 + (1.36 \times 5,800) + (2 \times 261)$$

$$= 225 + 1,088 + 90$$

$$= 9,715 \text{ m}^3/\text{day}$$

The dilution of the stormwater overflow is calculated, in accordance with the Procedures and Criteria for Storm Water Overflows as follows:

$$\text{River Boyne 95 percentile flow (at Navan):} = 0.282 \text{ m}^3/\text{s}$$

$$\begin{aligned} \text{DWF contributing to Athboy Pumping Station:} &= [185/(24 \times 3600)] \\ &= 0.0151 \text{ m}^3/\text{s} \end{aligned}$$

$$\begin{aligned} \text{Dilution of overflow:} &= (0.282/0.0151) \\ &= 18.67 \end{aligned}$$

A stormwater detention tank is not required for a dilution of greater than 8 in accordance with the Procedures and Criteria for Storm Water Overflows.

The forward two feed pumps in at the Athboy Pumping Station are capable of delivering a combined $600 \text{ m}^3/\text{hr}$. Formula A flow is calculated at $404.79 \text{ m}^3/\text{hr}$. The pumps are capable of delivering formula 'A' flow to treatment.

Athboy Pumping Station complies with Formula A. There is no requirement for a Stormwater tank as calculated by dilution of overflow. Therefore this SWO is fully compliant with the DoEHLG “Procedures and Criteria for Storm Water Overflows”, 1995.

Appendix 7.4

Priority Substances

Introduction

This report has been prepared for D0124-01, Athboy, in County Meath in accordance with the requirements of Condition 4.19 of the wastewater discharge licence for the agglomeration.

This desk top study has been undertaken to determine the necessity, if any, for analysis of the discharge to comply with the condition in the wastewater discharge licence based on the *Guidance on the Screening for Priority Substances for Waste Water Discharge Licences*, issued by the EPA. Relevant inputs to the waste water works and estimates of emissions from the discharge point have been taken into account in the preparation of this report. Relevant inputs to the waste water works, any relevant measurements / calculations / estimates of emissions from the discharge point and any relevant measurements undertaken at representative downstream monitoring locations have been taken into account in the preparation of this report.

Desktop Study

1.1 Assessment of Analysis Required

A. Review of all industrial inputs into WWTP

A review of all inputs into WWTP has indicated that there are no industrial type discharges, other discharges with a likelihood of priority substances, leachate discharges or other imports. The wastewater discharged to the wastewater treatment plant is domestic in nature.

B. Discharge monitoring

Monitoring was carried out for Priority Substances in October 2013. The results from this round of testing are included in Appendix 1 of this report. There have been no significant changes to the agglomeration since these samples were submitted for analysis.

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

No downstream samples have been taken and analysed for priority substances.

D. Participation in PRTR reporting

No PRTR is required for this 2015 AER.

1.2 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. A review of the national monitoring programme for priority substances in wastewater is proposed to be undertaken by Irish Water in 2015 in consultation with the EPA. It is proposed that this review, in consultation with the EPA, will recommend parameters to be monitored and frequency of monitoring at Irish Water WWTP's.

Assessment of Significance and Recommendations

The assessment carried out above indicates that data is available for all parameters based on either analysis or the PRTR toolkit. The level of dilution is based on 95 percentile flows and the EQS is based on Annual Average concentration requirements. As such the results of the analysis undertaken are conservative.

No parameters have been identified as potentially being higher than the required EQS following dilution at 95 percentile flows therefore no impact on the receiving waters is anticipated. Based on the assessment carried out it is not considered that any further sampling or analysis is required.

The EPA has prepared a report on priority substances, *An Inventory of Emissions to Waters in Ireland*. This document states that Ireland appears to have relatively few problems associated with the presence of Priority / Priority Hazardous substances in its surface waters. It identifies that wastewater discharges are a potential source of metals in receiving waters with lead being the main metal identified as associated with wastewater discharges. However, metals exceedences, in particular those for cadmium, lead, and nickel are primarily associated with areas of historic mining activity. Similarly PAH's have been identified in stormwater overflows but the most significant source is considered to be rainfall.

A consultation process with the EPA is proposed to be undertaken by Irish Water in 2015 to establish appropriate levels of monitoring for priority and dangerous substances, taking into account the particular requirements of the Water Framework Directive. This will allow a targeted monitoring programme to be undertaken in areas where priority substances have been identified or industrial discharges or imports provide a potential source, and where there is a shortfall of existing monitoring data.

Appendix 1 – Screening of Parameters for Priority Substances



**Mr McMoreland
Meath County Council
Meath CoCo. Projects Office
Unit 41/42
Enterprise Centre
Navan Meath**

ALS Environmental Ltd
Torrington Avenue,
Coventry, CV4 9GU

T: +44 (0)24 7642 1213
F: +44 (0)24 7685 6575

www.alsenvironmental.co.uk

21 October 2013

Test Report: COV/959438/2013

Dear Mr McMoreland

Analysis of your sample(s) submitted on 02 October 2013 is now complete and we have pleasure in enclosing the appropriate test report(s).


An invoice for the analysis carried out will be sent under separate cover.

Should you have any queries regarding this report(s) or any part of our service, please contact Customer Services on +44 (0)24 7642 1213 who will be happy to discuss your requirements.

If you would like to arrange any further analysis, please contact Customer Services. To arrange container delivery or sample collection, please call the Couriers Department directly on 024 7685 6562.

Thank you for using ALS Environmental Ltd and we look forward to receiving your next samples.

Yours Sincerely,

Signed: 

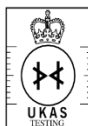
Name: J. Fell

Title: Chemistry Operations Manager



This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No.02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

Report Summary



**Mr Kealan McMoreland
Meath County Council
Meath CoCo. Projects Office
Unit 41/42
Enterprise Centre
Navan
Meath**

Date of Issue: **21 October 2013**

Report Number: **COV/959438/2013**

Issue **1**

Job Description: WW Discharge

Number of Samples
included in this report **1**

Job Received: **02 October 2013**

Number of Test Results
included in this report **134**

Analysis Commenced: **04 October 2013**

Signed:

Name: **J. Fell**

Date: **21 October 2013**

Title: **Chemistry Operations Manager**

ALS Environmental Ltd was not responsible for sampling unless otherwise stated. Sampling is not covered by our UKAS accreditation.

Information on the methods of analysis and performance characteristics are available on request.

Opinions and interpretations expressed herein are outside the scope of UKAS accreditation. The results relate only to the items tested.

Tests marked 'Not UKAS Accredited' in this Report/Certificate are not included in the UKAS Accreditation Schedule for our laboratory.

This communication has been sent to you by ALS Environmental Ltd. Registered in England and Wales. Registration No. 02148934. Registered Office: ALS Environmental Limited, Torrington Avenue, Coventry, CV4 9GU.

(c) ALS Environmental Ltd 2013. All rights reserved. We, ALS Environmental Ltd, are the owner of all copyright in this report. You must not copy, reproduce, amend or adapt this report, its contents or any format in which it is delivered without our prior written agreement. If you copy, reproduce, amend, or adapt this report in any way without our agreement you will be liable for any damage or loss to us. In the event of a dispute the copy of the report held by us shall be the reference copy.

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575

Page 1 of 6

Certificate of Analysis



1314
0897
4409



Report Number: **COV/959438/2013**

Issue **1**

Laboratory Number: **13724700**

Sample **1** of **1**

Sample Source: **Meath County Council**

Sample Point Description:

Sample Description: **Athboy D0124**

Sample Matrix: **Waste waters**

Sample Date/Time: **01 October 2013**

Sample Received: **02 October 2013**

Analysis Complete: **21 October 2013**

Test Description	Result	Units	Accreditation	Method
Glyphosate	<0.50	ug/l	N S	SUBCON
Di(2-ethylhexyl)phthalate	<10	ug/l	N S	SUBCON
2,6-dichlorobenzamide (BAM)	<0.10	ug/l	N S	SUBCON
Barium, Total as Ba	0.0169	mg/l	Y Cov	WAS049
Boron, Total as B	<0.23	mg/l	Y Cov	WAS049
Cadmium, Total as Cd	<0.0006	mg/l	Y Cov	WAS049
Chromium, Total as Cr	<0.0020	mg/l	Y Cov	WAS049
Cobalt, Total as Co	<0.0020	mg/l	Y Cov	WAS049
Copper, Total as Cu	<0.009	mg/l	Y Cov	WAS049
Lead, Total as Pb	<0.006	mg/l	Y Cov	WAS049
Mercury, Total as Hg	<0.10	ug/l	Y Cov	WAS013
Molybdenum, Total as Mo	<0.003	mg/l	Y Cov	WAS049
Nickel, Total as Ni	0.005	mg/l	Y Cov	WAS049
Tin, Total as Sn	<0.007	mg/l	Y Cov	WAS049
Vanadium, Total as V	<0.004	mg/l	Y Cov	WAS049
Zinc, Total as Zn	0.06	mg/l	Y Cov	WAS049
pH	7.5	pH units	Y Cov	WAS039
Conductivity- Electrical 20C	1380	uS/cm	Y Cov	WAS039
Total Hardness as CaCO3	393	mg/l	Y Cov	WAS049
Chloride as Cl	233	mg/l	Y Cov	WAS036
TOC as C	6.5	mg/l	Y Cov	WAS005
Cyanide, Total as CN	<0.009	mg/l	Y Cov	WAS018
Fluoride as F	<0.2	mg/l	Y Cov	WAS029
Diuron	<0.05	ug/l	Y Cov	GEO37
Isoproturon	Analyst Comment	ug/l	Y Cov	GEO37
Dichlobenil	<2	ng/l	Y Cov	GEO47
Dieldrin	<4	ng/l	Y Cov	GEO47
Isodrin	<4	ng/l	Y Cov	GEO47
PCB 28	<2	ng/l	Y Cov	GEO47
Linuron	<0.05	ug/l	Y Cov	GEO37
PCB 52	<2	ng/l	Y Cov	GEO47

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575

Page 2 of 6

Certificate of Analysis



1314
0897
4409



Report Number: **COV/959438/2013**

Issue **1**

Laboratory Number: **13724700**

Sample **1** of **1**

Sample Source: **Meath County Council**

Sample Point Description:

Sample Description: **Athboy D0124**

Sample Matrix: **Waste waters**

Sample Date/Time: **01 October 2013**

Sample Received: **02 October 2013**

Analysis Complete: **21 October 2013**

Test Description	Result	Units	Accreditation	Method
PCB 101	<2	ng/l	Y Cov	GEO47
PCB 118	<3	ng/l	Y Cov	GEO47
PCB 138	<2	ng/l	Y Cov	GEO47
PCB 153	<2	ng/l	Y Cov	GEO47
PCB 180	<3	ng/l	Y Cov	GEO47
Atrazine	<0.020	ug/l	Y Cov	GEO47
Simazine	<0.020	ug/l	Y Cov	GEO47
2,4 - D	<0.07	ug/l	Y Cov	GEO20
MCPA	<0.08	ug/l	Y Cov	GEO20
Mecoprop	0.05	ug/l	Y Cov	GEO20
2 - Chlorophenol	<1.00	ug/l	Y Cov	GEO18
2 - Methylphenol	<1.00	ug/l	Y Cov	GEO18
2,4 - Dichlorophenol	<1.00	ug/l	Y Cov	GEO18
2,4 - Dimethylphenol	<1.00	ug/l	Y Cov	GEO18
2,4,6 - Trichlorophenol	<1.00	ug/l	Y Cov	GEO18
3,5-Dimethylphenol	<1.00	ug/l	Y Cov	GEO18
4-Chlorophenol	<1.00	ug/l	Y Cov	GEO18
3+4-Methylphenol	<1.00	ug/l	Y Cov	GEO18
Phenol	<5.00	ug/l	Y Cov	GEO18
Acenaphthene	<0.01	ug/l	Y Cov	GEO19
Acenaphthylene	<0.01	ug/l	Y Cov	GEO19
Anthracene	<0.01	ug/l	Y Cov	GEO19
Benzo (a) anthracene	<0.01	ug/l	Y Cov	GEO19
Benzo (g,h,i) perylene	<0.01	ug/l	Y Cov	GEO19
Benzo (a) pyrene	<0.01	ug/l	Y Cov	GEO19
Benzo (b) fluoranthene	<0.01	ug/l	Y Cov	GEO19
Benzo (k) fluoranthene	<0.01	ug/l	Y Cov	GEO19
Chrysene	<0.01	ug/l	Y Cov	GEO19
Dibenz (a,h) anthracene	<0.01	ug/l	Y Cov	GEO19
Fluoranthene	<0.01	ug/l	Y Cov	GEO19
Fluorene	<0.01	ug/l	Y Cov	GEO19
Indeno (1,2,3) cd pyrene	<0.01	ug/l	Y Cov	GEO19

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575

Page 3 of 6

Certificate of Analysis



1314
0897
4409



Report Number: **COV/959438/2013**

Issue **1**

Laboratory Number: **13724700**

Sample **1** of **1**

Sample Source: **Meath County Council**

Sample Point Description:

Sample Description: **Athboy D0124**

Sample Matrix: **Waste waters**

Sample Date/Time: **01 October 2013**

Sample Received: **02 October 2013**

Analysis Complete: **21 October 2013**

Test Description	Result	Units	Accreditation	Method
Naphthalene	<0.01	ug/l	Y Cov	GEO19
Phenanthrene	<0.01	ug/l	Y Cov	GEO19
Pyrene	<0.01	ug/l	Y Cov	GEO19
PAH, Total	<0.01	ug/l	N Cov	GEO19
VOC	Y	ug/l	Y Cov	GEO32
Dichlorodifluoromethane	<1.0	ug/l	Y Cov	GEO32
Chloromethane	<1.0	ug/l	Y Cov	GEO32
Chloroethane	<1.0	ug/l	Y Cov	GEO32
Bromomethane	<1.0	ug/l	Y Cov	GEO32
Trichlorofluoromethane	<1.0	ug/l	Y Cov	GEO32
1,1-Dichloroethene	<1.0	ug/l	Y Cov	GEO32
Dichloromethane	<1.0	ug/l	Y Cov	GEO32
1,1-Dichloroethane	<1.0	ug/l	Y Cov	GEO32
cis-1,2-Dichloroethene	<1.0	ug/l	Y Cov	GEO32
2,2-Dichloropropane	<1.0	ug/l	N Cov	GEO32
Chloroform	<1.0	ug/l	Y Cov	GEO32
Bromochloromethane	<1.0	ug/l	Y Cov	GEO32
1,1,1-Trichloroethane	<1.0	ug/l	Y Cov	GEO32
1,1-Dichloropropene	<1.0	ug/l	Y Cov	GEO32
1,2-Dichloroethane	<1.0	ug/l	Y Cov	GEO32
Benzene	<1.0	ug/l	Y Cov	GEO32
1,2-Dichloropropane	<1.0	ug/l	Y Cov	GEO32
Trichloroethene	<1.0	ug/l	Y Cov	GEO32
Bromodichloromethane	<1.0	ug/l	Y Cov	GEO32
Dibromomethane	<1.0	ug/l	Y Cov	GEO32
cis-1,3-Dichloropropene	<1.0	ug/l	Y Cov	GEO32
Toluene	<1.0	ug/l	Y Cov	GEO32
trans-1,3-Dichloropropene	<1.0	ug/l	Y Cov	GEO32
1,1,2-Trichloroethane	<1.0	ug/l	Y Cov	GEO32
Carbon Tetrachloride	<1.0	ug/l	Y Cov	GEO32
Vinyl Chloride	<0.5	ug/l	Y Cov	GEO32
1,3-Dichloropropane	<1.0	ug/l	Y Cov	GEO32

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575

Page 4 of 6

Certificate of Analysis



1314
0897
4409



Report Number: **COV/959438/2013**

Issue **1**

Laboratory Number: **13724700**

Sample **1** of **1**

Sample Source: **Meath County Council**

Sample Point Description:

Sample Description: **Athboy D0124**

Sample Matrix: **Waste waters**

Sample Date/Time: **01 October 2013**

Sample Received: **02 October 2013**

Analysis Complete: **21 October 2013**

Test Description	Result	Units	Accreditation	Method
Tetrachloroethene	<1.0	ug/l	Y Cov	GEO32
Dibromochloromethane	<1.0	ug/l	Y Cov	GEO32
1,2-Dibromoethane	<1.0	ug/l	Y Cov	GEO32
Chlorobenzene	<1.0	ug/l	Y Cov	GEO32
1,1,1,2-Tetrachloroethane	<1.0	ug/l	Y Cov	GEO32
Ethyl Benzene	<1.0	ug/l	Y Cov	GEO32
m&p-Xylene	<1.0	ug/l	Y Cov	GEO32
o-Xylene	<1.0	ug/l	Y Cov	GEO32
Styrene	<1.0	ug/l	Y Cov	GEO32
Bromoform	<1.0	ug/l	Y Cov	GEO32
trans-1,2-Dichloroethene	<1.0	ug/l	Y Cov	GEO32
Isopropylbenzene	<1.0	ug/l	Y Cov	GEO32
1,1,2,2-Tetrachloroethane	<1.0	ug/l	Y Cov	GEO32
1,2,3-Trichloropropane	<1.0	ug/l	Y Cov	GEO32
n-Propylbenzene	<1.0	ug/l	Y Cov	GEO32
Bromobenzene	<1.0	ug/l	Y Cov	GEO32
2-Chlorotoluene	<1.0	ug/l	Y Cov	GEO32
1,3,5-Trimethylbenzene	<1.0	ug/l	Y Cov	GEO32
4-Chlorotoluene	<1.0	ug/l	Y Cov	GEO32
tert-Butylbenzene	<1.0	ug/l	Y Cov	GEO32
1,2,4-Trimethylbenzene	<1.0	ug/l	Y Cov	GEO32
sec-Butylbenzene	<1.0	ug/l	Y Cov	GEO32
p-Isopropyltoluene	<1.0	ug/l	Y Cov	GEO32
1,3-Dichlorobenzene	<1.0	ug/l	Y Cov	GEO32
1,4-Dichlorobenzene	<1.0	ug/l	Y Cov	GEO32
n-Butylbenzene	<1.0	ug/l	Y Cov	GEO32
1,2-Dichlorobenzene	<1.0	ug/l	Y Cov	GEO32
1,2-Dibromo-3-chloropropane	<2.0	ug/l	Y Cov	GEO32
1,2,4-Trichlorobenzene	<1.0	ug/l	Y Cov	GEO32
Hexachlorobutadiene	<1.0	ug/l	Y Cov	GEO32
Naphthalene	<1.0	ug/l	Y Cov	GEO32
1,2,3-Trichlorobenzene	<1.0	ug/l	Y Cov	GEO32

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575

Page 5 of 6

Certificate of Analysis



1314
0897
4409



Report Number: **COV/959438/2013**

Issue **1**

Laboratory Number: **13724700**

Sample **1** of **1**

Sample Source: **Meath County Council**

Sample Point Description:

Sample Description: **Athboy D0124**

Sample Matrix: **Waste waters**

Sample Date/Time: **01 October 2013**

Sample Received: **02 October 2013**

Analysis Complete: **21 October 2013**

Test Description	Result	Units	Accreditation	Method
MTBE	<1.0	ug/l	Y Cov	GEO32
Dibromofluoromethane	102.0	%Recovery	N Cov	GEO32
Toluene-d8	101.4	%Recovery	N Cov	GEO32
4-Bromofluorobenzene	89.2	%Recovery	N Cov	GEO32
Antimony, Total as Sb	0.0077	mg/l	Y Cov	WAS051
Selenium, Total as Se	<0.0016	mg/l	Y Cov	WAS051
Arsenic, Total as As	<0.0014	mg/l	Y Cov	WAS051

Analyst Comments for 13724700:

This sample has been analysed for Pesticides method GEO47, pH outside recommended stability times. It is therefore possible that the results provided may be compromised. The reporting limits for MCPA and 2,4-D have been raised due to interferences. Unable to report Isoproturon due to quality failure.

Accreditation Codes: Y = UKAS / ISO17025 Accredited, N = Not UKAS / ISO17025 Accredited, M = MCERTS
Analysed at: Cov = Coventry (CV4 9GU), Run = Runcorn (WA7 1SL), S = Subcontracted, Wak = Wakefield (WF5 9TG).
For Microbiological determinands 0 or ND=Not Detected, For Legionella ND=Not Detected in volume of sample filtered. The LOD for the Legionella analysis will increase where the volume analysed is <1000g (1g is approximately equivalent to 1ml for sample volume analysed).
I/S=Insufficient sample For soil/sludge samples: AR=As received, DW=Dry weight.

Signed:

Name: **J. Fell**

Date: **21 October 2013**

Title: **Chemistry Operations Manager**

ALS Environmental Ltd

Torrington Avenue, Coventry, CV4 9GU
Tel: +44 (0)24 7642 1213 Fax: +44 (0)24 7685 6575

Page 6 of 6