

ATTACHMENT A.1: NON-TECHNICAL SUMMARY

Aughrim Town is located about 13.2 kilometres from Arklow Town off the R747 and R753 in Country Wicklow.

Description of the Wastewater Treatment Works

The wastewater treatment plant serves the wastewater treatment needs of the town of Aughrim. The design capacity of the plant is 1,200 p.e.. The current p.e. loading on the plant at Aughrim is 1314 p.e. This was calculated using the BOD method, the BOD readings were grab samples.

The caretaker maintains the plant part time during the week, and usually works two hours at the weekend. It is an extended aeration type plant.

The site on which the existing plant is located has insufficient land for duplication to allow expansion. Land adjoining the existing site would need to be purchased to facilitate expansion.

The network consists of combined surface water sewers as well as foul sewers. The newer estates in Aughrim village have separate foul and surface water sewers.

The works at Aughrim consists of :

- Inlet screen
- Primary Settlement Tank
- Inlet Pumping station
- Overflow Chamber
- Sequencing Batch Reactor (Aeration Tank)
- Sludge Holding Tank
- Outfall Chamber
- Control House

The screenings at the moment are lime treated and are collected by a contractor and deposited of to landfill.

As part of the works carried out in early 2009, a flume is being installed on the stormwater overflow line from the screen. As part of these works a flowmeter will also be fitted on the secondary discharge pipe. There is a refrigerated composite sampler on the effluent.

The duration of the cycle of the SBR is approximately 9 and half-hours, this includes filling, aeration, settling and decanting.

The sources of emissions from the wastewater works

The village of Aughrim is served by the wastewater treatment works at Aughrim village in the townland of Killacloran. The older part of the village is mainly a combined system. The newer developments in the village have a separate system for surface water.

There is one discharge SW1 from the plant, it is a combination of a secondary discharge from the inlet works primary tank and the treated effluent.

There is also a stormwater overflow point (SWOP) from the screen.

There are two pumping stations on the network:

Roddenagh Road Pumping Station and a council estate pumping station called Riverfield Pumping Station.

The nature and quantities of foreseeable emissions from the wastewater works into the receiving aqueous environment as well as identification of significant effects of the emissions on the environment

The final effluent standards to be achieved are in accordance with the Urban Wastewater Directive: B.O.D. 25mg/litre, C.O.D. 125 mg/litre, S.S. 35 mg/litre.

The water quality is measured 10 metres upstream of the effluent pipe aSW1u and 25 metres downstream of the discharge point aSW1d.

The effluent discharges to the Aughrim River. It is secondary treated effluent. The primary discharge is a combination of treated effluent from the batch reactor and also the overflow from the primary settlement tank. It is termed SW1.

A flowmeter was placed on the treated effluent branch coming from the batch reactor for 5 days from the 20/02/09 to the 24/02/09, the average flow was found to be 443 m³/day.

A flowmeter was placed for 20 days on the secondary discharge only from the 19/01/09 to the 08/02/09 and the average flow was found to be 342 m³/day. The maximum flow over the 20 days was 802 m³/day on the 04/02/09 and the minimum flow was 88 m³/day on the 03/02/09.

A flowmeter was placed on the Stormwater overflow line for 5 days from the 15/01/09 to the 19/01/09 and the average flow was found to be 28.304 m³/day. The maximum flow over the 5 days was 66.42 m³/day on the 18/01/09 and the minimum flow was 3 m³/day on the 17/01/09.

The proposed technology and other techniques for preventing or, where this is not possible, reducing emissions from the waste water works

The older part of town is a combined system. All newly constructed developments have been installed as separate storm and foul systems.

Further measures planned to comply with the general principle of the basic obligations of the operator, i.e., that no significant pollution is caused

The treated effluent and influent is sampled 6 times a year to ensure compliance with the Urban Wastewater Directive. The water quality is measured 10 metres upstream of the effluent pipe (aSW1u) and 25 metres downstream of the discharge point (aSW1d).

Measures planned to monitor emissions into the environment

The treated effluent and influent is sampled 6 times a year to ensure compliance with the Urban Wastewater Directive. The water quality is measured 10 metres upstream of the effluent pipe (aSW1u) and 25 metres downstream of the discharge point (aSW1d). The primary discharge (SW1) , the secondary discharge (SD1) and the stormwater overflow discharge (SWOP) all discharge to the Aughrim River which is upstream of the designated site Avoca River Valley Ref. No. 001748 pNHA. The discharge point is 3.4 kilometres upstream of the designated site.

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ATTACHMENT B: GENERAL

Attachment B.1

Drawing No. : 204/01

Title: Boundary of Agglomeration for Aughtim Wastewater Treatment Works – B.1

Attachment B.2

Drawing No. : 204/02

Title: Site Layout of Aughtim Wastewater Treatment Works - B.2

Attachment B.3

Drawing No. : 204/03

Title: Monitoring & Sampling for Aughtim Wastewater Treatment Works - B.3

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B.4 Location of Secondary Discharge Point(s)

There is a secondary discharge point SD1 located at gps co-ordinates 31392.4034E, 179455.1184N. While the sequencing batch reactor is carrying out a cycle, the effluent is stored in the primary settling tank. The excess liquid discharges to the river; it joins the treated effluent from the batch reactor and becomes SW1 the primary discharge. SW1 is discharged to the Avonmore River at location 313203.976E, 17460.985N.

The secondary discharge point SD1 is shown on Drawing No. 204/02 Attachment B.2.
Title: Site Layout of Aughrim Wastewater Treatment Works.

B.5 Location of Storm Water Overflow Point(s)

The Storm water overflow SWOP is located at gps co-ordinates 313158.855E, 179473.659N. The stormwater overflow is located at the screen.

Drawing No.: 204/02

Title: Site Layout of Aughrim Wastewater Treatment Works.

B.6 Planning Authority

No planning permission was required for the development as it was constructed prior to the Local Government (Planning & Development) regulations, 1994.

B.7 Other Authorities

B.7(i) Shannon Free Airport Development Company (SFADCo.) area.

There is no discharge located within the Shannon Free Airport Development Company area.

B.7 (iii) Other Relevant Local Authorities

The wastewater discharge does not take place or is to take place in another Local Authorities area.

B.8 Notices and Advertisements

Copy of newspaper advertisement and site notice

Attachment B.8

Drawing No. 204/04

Title: Site Notice Location at Aughrim Wastewater Treatment Works – B.8

B.9 (i) Population Equivalent of Agglomeration

Calculations:

The population equivalent calculation was determined on the basis of BOD levels taken during the period 06/04/08 to 11/11/08.

Average effluent flow rate was 443 m³/day (Data from 20/02/09 to 24/01/09)

Average influent BOD was 178 mg/litre (Data from 06/04/09 to 11/11/09)

PE (BOD Method) = $(443 \times 1000) \times (178/1000)/1000/0.06 = 1,314$ PE.

Design PE of plant = 1,200 PE.

It should be noted that the wastewater treatment plant at Aughtim is heavily overloaded with surface water. The BOD samples were grab samples.

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B.9 (ii) Pending Development

Information on the calculated population equivalent (p.e.) to be contributed to the wastewater works as a result of those planning permissions granted

Planning Ref No.	House No.
053066	14
066533	1
072433	1
08306	1
066469	1
07799	1
072113	1
081432	1
07296	2
Total Houses	23
PE	69

Commercial Dev.	PE
053297	52
Total PE	121
% Commercial	43
% residential	57

The percentage of the projected p.e. to be contributed by non-domestic activities is 43 percent at 52 p.e..

The percentage of the projected p.e. to be contributed by domestic activities is 57 % at 69 p.e..

The plant at Aughrim was designed to accommodate 1,200 p.e.. The works is currently taking in 1,314 p.e. by calculation by BOD method. The pending developments will contribute 121 p.e. in the near future, giving a total of 1,435 p.e..

B.9 (ii) Fees

The appropriate fee has been included with this application.

B.10 Capital Investment Programme

Aughrim Wastewater Treatment Work is not included in any current investment programmes.

B.11 Significant Correspondence

There are no Section 63 notices issued by the Agency in relation to Aughrim Wastewater Works.

B.12 Foreshore Act Licences

There is no Foreshore Act Licence issued in relation to discharges from the wastewater works issued under the Foreshore Act 1933.

C.1 Operational Information Requirements

The wastewater treatment plant serves the wastewater treatment needs of the town of Aughrim. The population being served is estimated to be 1,314 p.e.. The design capacity of the plant is 1,200 p.e..

The caretaker maintains the plant part time during the week, and usually works two hours at the weekend. It is an extended aeration type plant.

The site on which the existing plant is located has insufficient land for duplication to allow expansion. Land adjoining the existing site would need to be purchased to facilitate expansion.

The network consists of combined surface water sewers as well as foul sewers. The newer estates in Aughrim village have separate foul and surface water sewers.

The works at Aughrim consists of:

- Inlet screen
- Primary Settlement Tank
- Inlet Pumping station
- Overflow Chamber
- Sequencing Batch Reactor (Aeration Tank)
- Sludge Holding Tank
- Outfall Chamber
- Control House

A screen performs the mechanical pre-treatment of the raw sewage. This screen is being replaced in early 2009 with a fine screen, screening the flow to 6 millimetres. The new screen has a macerator unit and also a compactor unit, which squashes the organic liquid out of the screenings and returns them to the inflow. The screenings will be deposited to a bin for disposal, they will have a high dry solids content (25% or better) and will be relatively clean screenings with very little organic matter present.

The screenings at the moment are lime treated and are collected by a contractor and deposited of to landfill.

As part of the works carried out in early 2009, a flume is being installed on the stormwater overflow line from the screen. As part of these works a flowmeter will also be fitted on the secondary discharge pipe. There is a refrigerated composite sampler SP1 on the effluent.

The next stage is the primary settlement tank, which is part of the original works constructed prior to the year 2000. In year 2000 the plant was upgraded with the construction of the SBR tank and sludge holding tank. The storage volume of the primary settlement tanks is approximately 70 m³.

The biological stage of the treatment system is extended aeration called sequenced batch reactor SBR . The process takes place in one tank with a net volume of 423m³. This one tank reactor operates according to the activated sludge principal but also uses the reactor as an aeration tank. The mixing and oxygen supply is performed by a floating surface aerator (BSK –Turbine).

The significant advantages of the ONE-TANK-REACTOR SYSTEM is that the aeration and clarifying processes are carried out in one tank only. This leads to a number of economic and technical benefits including but not limited to simple and efficient operational conditions, superior process results, low cost civil works and substantially lower space requirements compared to conventional systems.

The general operation concept of the system is as follows: the pretreated sewage (screened) enters the tank. The reactor fills up to the maximum water level; the inlet pumps will then be stopped. The aeration and mixing phase is performed, after which the turbine is automatically stopped, so the activated sludge can settle under perfect and undisturbed conditions (settling phase). There is no inlet flow to the reactor at the same time, which guarantees a settling process at optimized conditions. The settling phase ends after a period of one and half hours.

During the decanting phase, the purified sewage is discharged by means of a special submersible pump. This guarantees an undisturbed flow of the purified sewage. As soon as the minimum water level is reached, the effluent pump is stopped and the inlet pumps are started again and deliver the stored wastewater into the reactor. As anoxic and anaerobic conditions are required for nutrient removal, the turbine is not operated during the first fill up phase.

The duration of the cycle of the SBR is approximately 9 and half-hours, this includes filling, aeration, settling and decanting. The floating aeration turbine is made of GRP which is extremely strong construction, low weight and very smooth for perfect hydraulic attributes.

The waste sludge is stored in a separate sludge holding tank, which concentrates the waste sludge. There is a small control house on the site which houses the electrical control panel for the automatic and manual operation of the plant components.

The village of Aughrim is served by the wastewater treatment works at Aughrim village in the townland of Killacloran. The older part of the village is mainly a combined system. The newer developments in the village have a separate system for surface water.

There is one discharge SW1 from the plant, it is a combination of the secondary discharge from the inlet works primary tank and the treated effluent.

There is also a stormwater overflow point (SWOP) from the screen.

The effluent discharges to the Aughrim River. It is secondary treated effluent. The primary discharge is a combination of treated effluent from the batch reactor and also the overflow from the primary settlement tank. It is termed SW1.

A flowmeter was placed on the treated effluent branch coming from the batch reactor for 5 days from the 20/02/09 to the 24/02/09, the average flow was found to be 443 m³/day.

A flowmeter was placed for 20 days on the secondary discharge only from the 19/01/09 to the 08/02/09 and the average flow was found to be 342 m³/day. The maximum flow over the 20 days was 802 m³/day on the 04/02/09 and the minimum flow was 88 m³/day on the 03/02/09.

A flowmeter was placed on the Stormwater overflow line for 5 days from the 15/01/09 to the 19/01/09 and the average flow was found to be 28.304 m³/day. The maximum flow over the 5 days was 66.42 m³/day on the 18/01/09 and the minimum flow was 3 m³/day on the 17/01/09.

There are two pumping stations on the network:

Roddenagh Road Pumping Station and a council estate pumping station called Riverfield Pumping Station.

Drawing No. 204/05 is a flow process diagram of the wastewater treatment process at Aughrim works.

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C.1.1 Storm Water Overflows

There is one Stormwater Overflow Point which is termed SWOP. It is located at the screen and is at gps co-ordinates 31358.855E, 179473.659N. The discharge is screened prior to being discharged to the River. There is no measurement of the quantities overflowing during heavy rainfall. There is no plan to de-commission this overflow at the present time.

C.1.2 Pumping Stations

There are two pumping stations on the network. They are as follows: Roddenagh Road Pumping Station and Riverfield Pumping Station. The details of the pumping stations are given below:

Pumping Station Name:	Roddenagh Pumping Station
GPS Location of pumping station	312310.436E, 179369.092N
No. Of Pumps	2 pumps (1 duty, 1 standby)
Measures taken if power failure	Regularly checked
Storage Capacity	6 m ³
Frequency & Duration of activation of Emergency Overflow	Overflow facility at pumping station
Location of discharge entering receiving waters	Fishing Lake, Aughrim village
Owner:	Wicklow County Council

Pumping Station Name:	Riverfield Pumping Station
GPS Location of pumping station	312089.7E, 179098.5N
No. Of Pumps	2 pumps (1 duty, 1 standby)
Measures taken if power failure	-
Storage Capacity	-
Frequency & Duration of activation of Emergency Overflow	Overflow to Aughrim River
Location of discharge entering receiving waters	Aughrim, River
Owner:	Wicklow County Council

Drawing No. 204/06 Title: Attachment C.1.2 – Roddenagh Road Pumping Station for Aughrim Wastewater Treatment Works and Outfall Location

Drawing No. 204/07 Title: Attachment C.1.2.1 – Riverfield Pumping Station for Aughrim Wastewater Treatment Works and Outfall Location

Brief details of activities carried on in laboratory facilities associated with the activity. Details to include the monitoring carried out, the analytical methods used and any accreditation obtained by the laboratory.

On site in Aughrim Wastewater Treatment Plant, the caretaker carries out the following tests daily:

- D.O. levels in the aeration tank
- Cone tests are carried out on the aeration tank

Wicklow County Council Laboratory takes samples six times a year. They take samples from the influent chamber, effluent chamber, 5 metres upstream of the discharge point SW1, and 25 metres downstream of the discharge point SW1. The laboratory tests for the following: Ammonia, B.O.D., C.O.D. Conductivity, Nitrites, Ortho-phosphate, pH, Suspended Solids, Total Oxidised Nitrogen. Samples in some of the past years were grab samples.

Wicklow County Council laboratory facilities are at two locations, at the The Murrough, Wicklow Town, Co. Wicklow and at the Machinery Yard, Whitegates, Wicklow Town. These facilities are registered on the EPA Intercalibration Board list of quality-approved laboratories.

C.2 Outfall Design and Construction

There is only one primary discharge point (SW1) for Aughrim Wastewater Treatment Works, which is a combination of the treated effluent from the reactor and a secondary discharge point (SD1). The storm water overflows from the screen at point SWOP to the Aughrim River. This stormwater is screened at the inlet works.

The primary discharge flows from the works by gravity to the Aughrim River where it discharges from a twelve-inch pipe, which is enclosed in concrete. SW1 is a combination of the secondary discharge from the primary settlement tank and the treated effluent from the batch reactor. The location of the discharge point SW1 is 313203.976E, 17460.985N.

The location of the storm water overflow point SWOP is 31358.855E, 179473.659N.
The outfall pipe of the stormwater is a nine-inch pipe with flap valve and enclosed in concrete.

There are no drawings of the outfall construction.

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ATTACHMENT D: DISCHARGES TO THE AQUATIC ENVIRONMENT

D.1 Discharges to Surface Waters

In relation to the web based Table D.1(i)(b) for SW1 – Emissions to surface water – Characteristics of the Emission (Primary Discharge Point) , this table was filled out using an average of the three sample results taken by TelLab on the 29.10.08, 20.11.08 and 11.12.08.

Note: Total Nitrogen = Kjeldhal Nitrogen + TON

TON = Nitrate + Nitrite

Where monitoring information is available for the influent to the plant this data should also be provided in response to Section D.1.

The table below shows the results of samples taken at the influent of Aughrim Wastewater Treatment Works from 06/04/08 to 11/11/08 by Wicklow County Council.

SamplePurpose	SampleDate	Ammonium(N)	BOD	COD	Conductivity @ 20°C	Nitrites(N)	Ortho-phosphate	pH	SS	TON
STP Monitoring - Influent	06/04/2004	16.6	173	443	373	0.224	4.52	7.3	126	0.44
STP Monitoring - Influent	22/06/2004	26.95	193	846	511	0.233	9.26	7.59	110	0.36
STP Monitoring - Influent	28/09/2004	29.9	313	587	561	0.114	4.56	7.61	254	0.149
STP Monitoring - Influent	02/03/2005	9.68	104	313	258	0.142	1.92	7.19	174	0.386
STP Monitoring - Influent	09/08/2005	67.2	391	560	701.9	0.1	6.96	7.7	252	0.1
STP Monitoring - Influent	13/09/2005	82	562	940	861.7	0.13	8.5	7.99	470	0.129
STP Monitoring - Influent	07/02/2006	33.2	224	627	518	0.38	5.23	7.38	142	0.56
STP Monitoring - Influent	04/04/2006	11.9	112	177	321	0.16	2.3	7.07	130	5.3
STP Monitoring - Influent	26/07/2006	46.9	196	426	680	0.057	7.3	7.64	74	<0.1
STP Monitoring - Influent	12/09/2006	44.5	101	293	685	0.43	6.18	7.67	58	<0.1
STP Monitoring - Influent	13/03/2007	10	56	165	287	0.17	1.8	6.82	42	5.06
STP Monitoring - Influent	26/06/2007	22	113	437	387	0.716	2.73	6.96	106	0.8
STP Monitoring - Influent	24/07/2007	22.7	80	227	436	0.65	2.6	7.08	96	1.44
STP Monitoring - Influent	07/08/2007	24.7	153	547	485	0.1	3.4	7.25	104	0.5
STP Monitoring - Influent	11/09/2007	36.5	160	299	534	0.13	4.3	6.85	248	0.33
STP Monitoring - Influent	20/11/2007	4.5	49	101	201	0.073	1.05	6.99	52	1.75
STP Monitoring - Influent	22/01/2008	8.3	32	163	273	NT	1.5	6.62	52	2.83
STP Monitoring - Influent	19/03/2008	30.3	191	423	458	NT	17.9	7.1	214	3.3
STP Monitoring - Influent	13/05/2008	49.7	455	1310	634	0.105	6.76	7.68	796	0.11
STP Monitoring - Influent	15/07/2008	29.5	93	264	473	1.08	4.54	7.04	108	1.3
STP Monitoring - Influent	16/09/2008	17.1	105	440	376	0.47	2.4	5.98	86	0.81
STP Monitoring - Influent	11/11/2008	14.3	65	144	329	0.122	3	7.33	66	1.55

Results of samples taken by TelLab are in the Table below:

	Inlet	Inlet	Inlet
	29.10.08	20.11.08	11.12.08
Determinand	76112	76780	77357
Ammoniacal Nitrogen	3.6	12	1.9
Arsenic (ug/l) #	<2.0	<0.001	1.2
Barium (ug/l) #	<5.0	0.021	10
BOD ##	39	118	65
Boron	<0.03	<0.3	0.16
Cadmium (ug/l) #	<0.1	<0.1	<0.1
Chromium (ug/l) #	<1	<1.0	<1.0
COD	110	347	237
Conductivity (uS/cm @ 20°C)	141	339	253
Copper (ug/l) #	4	0.035	11
Cyanide	<0.01	<0.01	<0.01
Fluoride	<0.1	<0.1	<0.1
Kjeldhal Nitrogen	9	21	12
Lead (ug/l) #	<10	<2.0	<2.0
Mercury (ug/l) #	<0.2	<0.0001	<0.05
Nickel (ug/l) #	<5.0	0.0038	4
Nitrate as N	<0.11	<0.11	0.19
Nitrite as N	<0.06	<0.06	<0.06
Orthophosphate as P	-	-	1.1
Orthophosphate as P	0.7	2.6	-
pH	7.1	6.6	6.6
Selenium (ug/l) #	<5.0	<0.001	0.8
Sulphate	8	2	18
Suspended Solids	63	88	31
Temperature (°C)	8	11	9
Total Phenols by Colourimetry	0.05	0.05	0.19
Total phosphorus	1.5	3.5	2.1
Zinc #	0.06	0.04	0.06

These results were grab samples and as such may not be a true representation of influent figures for Aughrim Wastewater Treatment Works.

D.2 Tabular Data on Discharge Points

Table D.2 Tabular Data on Discharge Point

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ATTACHMENT E: MONITORING

E.1 Waste Water Discharge Frequency and Quantities – Existing & Proposed

Indicate if composite sampling or continuous flow monitoring is in place on the primary or any other discharge points. Detail any plans and timescales for the provision of composite sampling and continuous flow meters.

There is a composite sampler SP1 on the effluent at Aughrim Wastewater Treatment Works. Works to be carried out in early 2009 include two flowmeters one to be installed on the secondary discharge SD1 and one on the stormwater overflow SWOP.

The treated effluent and influent is sampled six times a year by Wicklow County Council Laboratory to ensure the effluent complies with the Urban Wastewater Directive 2001 to 2006. The water quality of the Aughrim River is measured twenty-five metres downstream of the primary discharge point SW1 at Monitoring Point aSW1d 313228.5495E, 179460.985N and ten metres upstream at Monitoring Point aSW1u 313194.169E, 179463.0406N of the primary discharge point SW1.

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E.2. Monitoring and Sampling Points

The Environmental Laboratory of Wicklow County Council monitors the wastewater treatment plants in County Wicklow in accordance with Urban Wastewater Regulations and EPA guidance. The sampling programme is reviewed each year to account for changes in population, treatment performance and legislation/EPA advice.

The wastewater (influent, effluent and mixed liquor) and receiving water (upstream and downstream river samples) are sampled at designated sampling points. The influent and effluent samples are collected by automatic 24-hr composite sampling equipment, many of which have refrigeration. The other samples are grab samples taken at an instant in time. Wicklow County Council is committed to providing a safe place of work at all our treatment plants including safe access to sampling points.

The analysis of samples taken from the wastewater treatment plant takes place on the day of sampling. There is a documented test procedure for each analytical method used in the laboratory based on APHA/AWWA Standard Methods for the Examination of Water & Wastewaters' or UK Standing Committee of Analysts 'Methods for Examination of Waters and Related Materials'. As part of our quality control procedures known concentrations of check standards are analysed with each sample run. The analytical equipment is maintained and calibrated in accordance with the manufacturers instructions and SOP. The Environmental Laboratory also participates in the EPA's intercalibration programme and is included on the List of Approved Laboratories 2007 (EPA Website www.epa.ie) for many tests including BOD, COD, TSS, Ammonia, Nitrate and Phosphate.

Extract from EPA website.

“Section 66 of the Environmental Protection Agency Act 1992 provides for the establishment of an intercalibration programme for the purpose of assessing analytical performance and ensuring the validity and comparability of environmental data for laboratories, which submit data to the Agency. It also provides for the establishment of a register of quality-approved laboratories, which would normally be expected to

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send data to the Agency. This register lists, on a parameter-by-parameter basis, the laboratories, which performed satisfactorily in the EPA intercalibration programme for the previous year. The register is updated annually.

The objective criteria for inclusion in the register are listed below.

Criteria for compliance

4 satisfactory returns from 5 or 3 satisfactory returns in consecutive rounds or current laboratory accreditation Criteria for pH require 3 returns within 0.20 pH units of reference concentration and 1 return within 0.30 units.”

E.3. Tabular data on Monitoring and Sampling Points

Table E.3

E.4 Sampling Data

Table E.4

Wicklow County Council Sampling Schedule for 2009

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Table E.4 Sampling Data

12 months of sampling data pertaining to the discharge taken by Wicklow County Council.

StationName	SampleDate	Ammonium(N)	BOD	COD	Colour	Conductivity @ 20°C	D.O. % Saturation	D.O. (Measurement)	Nitrites(N)	Ortho-phosphate	pH	S.S.	Temperature	T.O.N.(N)
Downstream 25m of discharge pipe	22/01/2008	0.031	1.5		NT	93	102	12.35	0.004	0.009	6.82	4	7	2.54
Downstream 25m of discharge pipe	19/03/2008	NT	1.6		NT	95	97.5	12.51	NT	NT	6.09	1	5.1	1.9
Downstream 25m of discharge pipe	13/05/2008	0.088	1.2		NT	102	104.4	10.82	0.012	0.008	7.52	0	13.8	1.8
Downstream 25m of discharge pipe	15/07/2008	0.138	0.8		NT	98.1	99.9	10.48	0.021	0.005	6.78	3	13.4	2.23
Downstream 25m of discharge pipe	16/09/2008	0.058	0.9		NT	86.9	99.7	11.07	0.004	0.01	5.53	0	11.2	1.3
Downstream 25m of discharge pipe	11/11/2008	0.056	1		NT	90	103	12.17	0.006	0.006	7.67	0	7.3	1.96
Downstream 25m of discharge pipe	13/01/2009	0.08	1		NT	79	102.8	12.5	0.006	0.011	5.88	0	6.4	1.52
Effluent from composite sampler	22/01/2008	0.04	1.4	<25		220			0.016	0.27	6.72	2		3.1
Effluent from composite sampler	19/03/2008	NT	9.6	28		277			NT	2.48	6.36	6		4.6
Effluent from composite sampler	13/05/2008	28.7	17	78		531			0.028	2.5	7.39	21		0.076
Effluent from composite sampler	15/07/2008	18.7	6	36		401			0.32	1.21	7.55	4		0.68
Effluent from composite sampler	16/09/2008	0.086	2	<25		260			0.07	1.16	6.21	4		6.9
Effluent from composite sampler	11/11/2008	0.019	3.9	<25		208			0.163	0.29	7.51	7		4.3
Effluent from composite sampler	13/01/2009	10.5	5	33		295			0.063	1.29	6.45	4		0.55
Influent pipe in settlement tank	22/01/2008	8.3	32	163		273			NT	1.5	6.62	52		2.83
Influent pipe in settlement tank	19/03/2008	30.3	191	423		458			NT	17.9	7.1	214		3.3
Influent pipe in settlement tank	13/05/2008	49.7	455	1310		634			0.105	6.76	7.68	796		0.11
Influent pipe in settlement tank	15/07/2008	29.5	93	264		473			1.08	4.54	7.04	108		1.3
Influent pipe in settlement tank	16/09/2008	17.1	105	440		376			0.47	2.4	5.98	86		0.81
Influent pipe in settlement tank	11/11/2008	14.3	65	144		329			0.122	3	7.33	66		1.55
Influent pipe in settlement tank	13/01/2009	16.4	90	181		320			0.14	3.2	6.52	84		0.81
Upstream 10m of effluent pipe	22/01/2008	0.034	1.6		NT	91	100	12.1	0.003	0.01	6.45	4	7	2.45
Upstream 10m of effluent pipe	19/03/2008	NT	1.7		NT	91	95.2	12.26	NT	NT	6.24	1	5.1	2.2
Upstream 10m of effluent pipe	13/05/2008	0.062	1.2		NT	100	99.9	10.4	0.006	0.009	7.51	0	13.6	1.9
Upstream 10m of effluent pipe	15/07/2008	0.09	0.6		NT	94.5	95.7	10.07	0.004	0.005	7.12	2	13.3	2.2
Upstream 10m of effluent pipe	16/09/2008	0.084	0.9		NT	85.3	97.3	10.69	0.004	0.012	5.53	3	11.2	1.7
Upstream 10m of effluent pipe	11/11/2008	0.053	RNV		NT	87	101	11.97	0.006	0.007	7.5	2	7.3	1.9
Upstream 10m of effluent pipe	13/01/2009	0.094	1		NT	78	99.2	12.06	0.005	0.016	5.86	0	6.4	1.43

ATTACHMENT F: EXISTING ENVIRONMENT & IMPACT OF THE DISCHARGE(S)

F.1. Assessment of Impact on Receiving Surface or Ground Water

There is no development proposed at Aughrim Wastewater Treatment Works, which would require an Environmental Impact Statement to be carried out.

Impact on Receiving Surface Water

The effluent samples from Aughrim Wastewater Treatment Works comply with the results required under the Urban Wastewater Directive of BOD 25 mg/l, COD 125 mg/l and SS of 35 mg/l. The treated effluent is secondary treated effluent.

When taking into account the lab results of samples taken by TelLab at aSW1u and aSW1d the following can be noted in Tables F.1 (b) and bearing in mind the limits set out in Water Quality (Dangerous Substances) Regulations, 2001 for dangerous substances it can be seen that the samples are all below the limits.

The proposed EQS under the Water Framework Directive sets out proposed limits that rivers should achieve in order to be considered of good ecological status. The results in Tables F.1 (i)(a) show sampled results of monitored point aSW1u and monitored point aSW1d.

Secondary Discharge Point

There is one secondary discharge point from the wastewater treatment works in Aughrim. It is located at gps co-ordinates 313192.4034E, 179455.1184N and is the overflow from the primary settlement tank.

Groundwater Emissions

There are no discharges to groundwater from the wastewater treatment works in Aughrim.

Existing Environment in terms of Water Quality

The effluent SW1 discharges into the Aughrim River. The water quality of the Aughrim River would be reportable under the Waster Framework Directive. The closest EPA station is 10A020200, which gave a Q value of 4 in 2006. The EPA station is located at Coates Bridge.

The following are the Q ratings for the previous years:

Year	1990	1994	1997	2000	2003	2006
Q rating	4	5	4-5	4-5	3	4

A water quality management plan or catchment management plan for the Eastern River Basin Project has been produced only in recent months. It is on display for public consultation for six months (January 2009 to June 2009). It is hoped it will be voted in (incorporating any changes required by the public) and operational in December 2009. The ERBD management plan will set out that the biological rating of the river must be maintained indefinitely or improved. As can be seen from the Table above the history of Biological Quality for the station, the Q rating has come back up to 4 in 2006 from a value of 3 in 2003. The Eastern River Basin Management Plan is enclosed at the back of this application.

Dangerous Substances

The emissions of the main polluting substances (as defined in the Dangerous Substances Regulations S.I. No. 12 of 2001) do not impair the environment.

Water Abstractions

There are no drinking water abstraction points downstream of the discharge point of Aughrim Wastewater Treatment Works.

Significant effects due to emissions

The Aughrim River is joins the Avoca River. Aughrim Wastewater Treatment Works discharges to the Aughrim River at a point which is upstream of the designated site Avoca River Valley Ref: No. 001748 pNHA. The discharge from the works is 3.4km upstream of the designated site.

Aughrim Wastewater Treatment Works discharges to the Aughrim River, which is joins the Avoca River. In accordance with Circular L8/08, 2nd of September 2008 Water Services Investment and Rural Water Programmes- Protection of Natural Heritage and National Monuments this works requires an initial screening.

This screening methodology below is used to determine whether an AA for Natura 2000/European sites or habitats and species in the annexes of the EU Birds and Habitats Directives is necessary or not. It also should be applied to NHAs.

Initial Screening for Aughrim Wastewater Treatment Works

1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA? NO
2. Will nationally protected species be directly impacted? Wildlife Acts (19976 and 2000) Flora Protection order (S.I. 94 of 1999) NO
3. Is the development a surface water discharge or abstraction in the surface water catchment or immediately downstream of a nature conservation site with water dependant qualifying habitats/species? NO
4. Is the development a groundwater discharge or abstraction in the groundwater catchment or within 5 km of a nature conservation site with water-dependant qualifying habitats/species? YES
5. Is the development in the surface water or groundwater catchment of salmonid waters? NO
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc? NO
7. Is the development a surface discharge or abstraction to or from marine waters and within 3 km of a marine nature conservation site? NO
8. Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species? NO

An appropriate assessment is required for the discharge from Aughrim Wastewater Treatment Works.

Measures of Minimising Pollution

There are no measures for minimising pollution over long distances or in the territory of other states as this does not apply.

Modelling of Discharges

There has been no modelling of the discharge from the agglomeration.

F.2 Tabular Data on Drinking Water Abstraction Point(s)

There is no drinking water abstraction point downgradient of the discharge point.

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ATTACHMENT G: PROGRAMMES OF IMPROVEMENTS

G.1 Compliance with Council Directives

There is no current programme of improvements for the Wastewater Treatment Works at Aughrim. The emissions from Aughrim Wastewater Treatment Works complies with or will not result in the contravention of the Dangerous Substances Directive 2006/11/EC, Water Framework Directive 2000/60/EC, Birds Directive 79/409/EEC, Groundwater Directives 80/68/EEC & 2006/118/EC, Drinking Water Directives 80/778/EEC, Urban Waste Water Treatment Directive 91/271/EEC, Habitats Directive 92/43/EEC, Environmental Liabilities Directive 2004/35/EC, Bathing Water Directive 76/160/EEC, and Shellfish Waters Directive (79/923/EEC).

G.2 Compliance with Water Quality Standards for Phosphorus Regulations (S.I. No. 258 of 1998)

There is no current programme of improvements for the Wastewater Treatment Works at Aughrim in regard to Phosphorus. The final effluent and upstream and downstream locations of the primary discharge point have been monitored in terms of phosphorus levels and can be seen on Table E.4.

G.3 Impact Mitigation

There is no current programme for impact mitigation as the discharge from Aughrim Wastewater Treatment Works is not resulting in significant environmental pollution.

G.4 Storm Water Overflow

There is a stormwater overflow from the works at Aughrim to the Aughrim River. The stormwater overflow is screened prior to discharge. The Stormwater overflow point SWOP (Stormwater discharge point) is located at gps co-ordinates of 313158E, 179473 N. There is no current programme of improvements for the Wastewater Treatment Works at Aughrim.