

### B.9(i) Population Equivalent of Agglomeration

Calculations:

The population equivalent calculation below is determined on the basis of BOD levels taken during the period August 2007 to April 2008.

Average influent flow rate 538 m<sup>3</sup>/day

Average influent BOD = 295.9 mg/l

PE (BOD method) =  $(538 \times 1000) \times (295.9/1000)/1000/0.06 = 2653 \text{ PE}$

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## B.9 (ii) Pending Development

Where planning permission has been granted for development(s), but development has not been commenced or completed to date, within the boundary of the agglomeration and this development is being, or is to be, served by the waste water works provide the following information;

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

The calculated population equivalent to be contributed to the wastewater treatment works at Baltinglass as a result of planning permissions granted is 183 p.e..

- The percentage of the projected p.e. to be contributed by the non-domestic activities,

The percentage of the projected p.e. to be contributed by non-domestic activities is 15 % (ie. 27/183). The percentage of the projected p.e. to be contributed by domestic activities is 85 % (ie. 156/183)

- The ability of the wastewater works to accommodate this extra hydraulic and organic loading without posing an environmental risk to the receiving water habitat.

The current loading going to the plant at Baltinglass is 2,653 p.e.. with the additional pending developments of 183 p.e. the total p.e. is 2,836 p.e.. The plant was designed to cater for a population equivalent of 3,000 p.e. therefore the wastewater works will be able to accommodate the extra hydraulic and organic loading. The effluent results to date show that the plant operates within the final effluent limits set out in the Urban Wastewater Directive.

### **B.9 (iii) Fees**

The relevant fee of € 25,000 has been included with the application.

### **B.10 Capital Investment Programme**

A new holding tank is proposed at the existing wastewater treatment plant at Lathaleere, Baltinglass, Co. Wicklow. The holding tank will be an above-ground structure with a capacity not exceeding 150 cubic metres. The height of the holding tank shall not exceed 4 metres above adjacent ground level.

Baltinglass wastewater treatment plant currently treats leachate delivered to the plant from the Council's landfill site at Rampere, Baltinglass. The purpose of the proposed development is to provide temporary storage of the leachate prior to its treatment at the plant and will facilitate the proper operation of the plant. It will reduce shock loading to the plant, as the leachate can then be drip-fed to the works.

The funding for this proposed tank will come from Waste Revenue. The completion date for the proposed storage tank is the end of 2009.

A double belt press is also proposed to upgrade the existing sludge dewatering facilities on site. The funding for this project is the Wicklow Water Services Investment Programme 2007-2009 under the Wicklow Sludge Management Fund. This fund is for improvements to sludge handling facilities and dewatering facilities in small wastewater treatment plants. Improved handling of sludge in turn allows better dewatering of sludge, which leads to better treatment of the effluent. The Wicklow Water Services Investment Programme 2007-2009 is attached below. The projected date for the completion of the works is December 2009.

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# Wicklow\*

## Water Services Investment Programme 2007 - 2009

Schemes at Construction	W/S	Est. Cost
Rathdrum Wastewater Treatment Plant	S	4,432,000
Wicklow Sewerage Scheme (Wentworth Place Culvert)	S	3,000,000
		<b>7,432,000</b>
<b>Schemes to start 2007</b>		
Arklow Sewerage Scheme (Advance Works)	S	1,000,000
Enniskerry Water Supply Scheme	W	2,600,000
Wicklow Sewerage Scheme (DBO)	S	30,000,000
		<b>33,600,000</b>
<b>Schemes to start 2008</b>		
Arklow Water Supply Scheme Stage 3	W	35,200,000
Bray Catchment Sewerage Scheme (Rehabilitation and Ancillary Works)	S	8,000,000
Dunlavin Sewerage Scheme	S	5,100,000
Newtownmountkennedy Water Supply Scheme	W	8,000,000
West Wicklow Water Supply Scheme Stage 1 (Blessington)	W	6,600,000
West Wicklow Water Supply Scheme Stage 2	W	12,200,000
Wicklow Sludge Management	S	2,860,000
		<b>77,960,000</b>
<b>Schemes to start 2009</b>		
Arklow Sewerage Scheme	S	15,900,000
Newtownmountkennedy Sewerage Scheme (Main Scheme)	S	15,500,000
Wicklow Town Water Supply Scheme	W	42,400,000
		<b>73,800,000</b>
<b>Serviced Land Initiative</b>		
Blessington Wastewater Treatment Plant	S	3,445,000
		<b>3,445,000</b>
<b>Schemes to Advance through Planning</b>		
Aughrim Water Supply Scheme	W	15,300,000
Bray Water Supply Scheme (Storage and Trunk Main)	W	15,800,000
Greystones Sewerage Scheme	S	3,000,000
Rathdrum Water Supply Scheme	W	15,300,000
		<b>49,400,000</b>
<b>Water Conservation Allocation</b>		<b>1,300,000</b>
<b>Asset Management Study</b>		<b>100,000</b>
<b>Programme Total</b>		<b>247,037,000</b>

\* All Wicklow County Council schemes fall within the Greater Dublin Area as described in the National Spatial Strategy

### **B.11 Significant Correspondence**

Baltinglass Wastewater Treatment Works has never received a Section 63 notice issued by the Agency.

### **B.12 Foreshore Licence**

Baltinglass Wastewater Treatment Works has not received a Foreshore Licence in relation to its discharge.

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## ATTACHMENT C: INFRASTRUCTURE & OPERATION

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### C.1 Operation Information Requirements

The plant at Lathaleere, Baltinglass is designed to cater for 3,000PE.

The plant is designed to cater for the following loadings:

Dry Weather Flow (D.W.F) =  $691\text{m}^3/\text{day}$

Max. Flow (3 D.W.F) =  $24\text{l/sec}$

Max. Rate of Flow for Preliminary Treatment ( 6 D.W.F) =  $48\text{ l/sec}$

The plant is manned from 9.00 a.m. to 5.00 p.m., Monday to Friday and additional hours at the weekend consisting of one hour on a Saturday and one hour on a Sunday. This would be a basic week.

The treatment works consists of the following items:

- Inlet works (Grit trap & clarifier, coarse screens, fine screens)
- Flow Dividing Chamber
- 2 No. Aeration Basins complete with individual surface aerators
- 1 No. Clarifier
- Sludge Return /WAS pump sump
- Sludge Return Tank complete with picket fence thickener
- Filter Belt press

The plant comprises of physical treatments such as grit removal and coarse and fine screenings. The grit trap at the inlet works removes grit from the sewage. The grit settles to the base of the grit trap and is intermittently washed and pumped out to a drainage chamber. The removal of the grit prevents damage and unnecessary wear to the mechanical units (ie. Pumps etc.) The manual screen has an aperture of 20mm. The fine screen has an aperture of 6mm.

At a time of storm the inlet sump fills up and then the storm water sump fills up and flows into the storm water excess sump. When the storm water excess sump is full, the water flows into the adjacent storm water tank. In turn when the storm water tank is full the water flows over a weir to the river. It joins the primary discharge pipe, which holds the treated effluent from the plant as it makes its way to the river. The primary discharge point is SW1. The point where the storm water joins the treated effluent is called the Storm water overflow point 1(SWOP1). After the storm subsides the water in the storm tank flows by gravity back to the inlet sump where it is pumped by the forward feed pumps to the aeration tank. The caretaker records daily the status of the storm holding tank (full/empty etc.).

The Biological or chemical process is extended aeration activated sludge process. The plant uses a process known as surface aeration to achieve a high effluent quality that complies with the Urban waste Water Treatment Directive 91/271/EEC. The principle of the extended activated sludge process is that the micro-organisms grow and reproduce utilizing the food and nutrients available in the sewage and the oxygen supplied by the rotors thus converting the soluble pollutant load to cell matter and inert end products. Settlement is used to separate out the end product sludge from the treated effluent. In the settlement process in the aeration tanks the suspended solids come together to form larger "flocs". These flocs are allowed to settle under quiescent conditions in the settlement tanks. The clarified effluent overflows the tank via the overflow weirs. The settled sludge is drawn hydrostatically from the bottom of the settlement tanks and is returned to the aeration tanks to maintain a high MLSS concentration.

The return sludge is returned to the aeration tanks by way of a sludge-lifting pump which gently raises the sludge without damaging the biological flocs. When the settleable solids indicate excess concentration of sludge then quantities of sludge can be wasted from the clarifier by the excess sludge submersible pump which pumps the sludge to the picket fence thickener (P.F.T.). Typically the sludge enters the P.F.T. at about 0.8 %-1.0 % dry solids but can settle in time within the P.F.T. to typically 2-3 % dry solids. The supernatant overflows and gravitates to a submersible pump sump from where it is returned to the works.

When the quantity of sludge in the P.F.T. is such that dewatering is required the filter belt press is used to produce a dry sludge cake with the filtrate being returned to the works.

There are two flow meters in the works, one on the influent flow after the screens and one on the effluent flow. The flow meters are a magnetic flow type. There are two samplers one on the influent and one on the effluent; they are both refrigerated composite samplers.

There is one discharge from the works and that is the treated effluent.

The plant also takes in leachate from the landfill at Rampere, Baltinglass, County Wicklow. The plant also takes in sludge loads from the following smaller plants Donard, Logatryna, Milltown, Kiltegan, Stratford and domestic septic tanks.

Imported Leachate and Sludges	Leachate m <sup>3</sup>	Sludge Imports m <sup>3</sup>
Period January -March 2007	4100	590
Period April - June 2007	4100	441
Period July - September 2007	1152	441
Period October - December 2007	1260	549
<b>Total 2007</b>	<b>10611</b>	<b>2021</b>

The sludges are not limed. They are sent for composting and then on for use in land remediation at tailing ponds in North Kilkenny.

The plant is designed to cater for 3,000PE. The current loading going to the plant is 2,653 PE. The pending developments granted in the last 5 years but not yet built amount to 183PE.

A process flow diagram of the works is shown in Attachment C.1, Drawing Number: 0202/09, Title: Process Flow Diagram of Baltinglass Treatment Wastewater Works.

#### **C.1.1 Storm Water Overflows**

There is one storm water overflow at the wastewater treatment plant in Baltinglass. At a time of storm the inlet sump fills up and then the storm water sump fills up and flows into the storm water excess sump. When the storm water excess sump is full, the water flows into the adjacent storm water tank. In turn when the storm water tank is full the water flows over a weir to the river. It joins the primary discharge pipe, which holds the treated effluent from the plant as it makes its way to the river. The primary discharge point is SW1. The point where the storm water joins the treated effluent is called the Storm Water Overflow Point 1 (SWOP1). The caretaker records daily the status of the storm holding tank (full/empty etc.).

It can be seen on Attachment C.1.1, Drawing Number: 0202/08, Title: Storm Water Overflow Point SWOP1 at Baltinglass Wastewater Treatment Works.

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