



OF

**LICENSING &
RESOURCE USE**

**This Report has been cleared
for submission to the Board by
the Programme Manager P. Nolan
Signed: N. Kearey Date: 3/12/08.**

INSPECTORS REPORT ON A LICENCE APPLICATION

TO:	DIRECTORS	
FROM:	Marian Doyle	- Licensing Unit
DATE:	03 rd December 2008	
RE:	Application for a Waste Licence from Waterford City Council , Wallace House, Maritana Gate, Canada Street, Waterford, Licence Register W0244-01 .	

Application Details	
Type of facility:	Municipal Wastewater Treatment Plant with Sludge Treatment
Class(es) of Activity (P: principal activity):	3 rd Schedule: Class 6 (P), 4 th Schedule: Class 2
Quantity of waste managed per annum:	95,100 tonnes per annum
Classes of Waste:	Sewage sludge from the wastewater treatment process
Location of facility:	Springfield House, Gorteens, Co. Kilkenny
Licence application received:	13 th May 2008
Third Party submissions:	None
EIS Required:	Yes
Article 14 Notices sent:	15 th August 2008
Article 14 Compliance date:	7 th November 2008
Site Inspection:	7 th July 2008

1. Facility

The facility is a proposed wastewater treatment plant for Waterford City and its Environs. The plant, which is under construction, will provide secondary treatment and cater for domestic and industrial wastewater. The infrastructure includes anaerobic digestion for the treatment of sludge generated by the wastewater treatment process. The facility is to be operated by Celtic Anglian Water on behalf of Waterford City Council as part of a Design Build Operate (DBO) contract.

A planning application was submitted to Kilkenny Co. Co. on 9th December 1998, for construction of the wastewater treatment plant, access road, outfall pipe work to the River Suir & associated development works. This was accompanied by an EIS (November 1998). The Preliminary Report

was prepared in 1994. Following an appeal the development was approved by An Bord Pleanála in January 2000. A report updating sections of the EIS was submitted with the application.

Under the Waste Management Acts 1996 to 2008 the treatment of sewage sludge from municipal wastewater treatment plants (MWWTP's), where the residual sludge is sent for disposal, is a licensable activity. The residual or final sludge produced by the facility (sludge bio-cake) is at this time is proposed to be sent for disposal to landfill. The Agency advised Waterford City Council of the need for a waste licence some years ago and this was confirmed at further meetings with the Council.

Section 41(4) of the Waste Management Acts (WMA) requires that in addition to the waste activity, all technically associated activities also fall under the jurisdiction of a waste licence. In this case the sludge treatment processes leave a residue, which is dewatered, with the return liquors (effluent) sent back into the MWWTP system for treatment. Therefore the MWWTP treats the effluent from the WMA waste activity. Also, sludge from final settlement tanks in the MWWTP (which treat both the return liquors and the primary municipal effluent) is sent back into the sludge treatment system. Therefore there is a high degree of technical connectivity and interrelationship between the WMA activity and the associated MWWTP activities. This connectivity was considered by the Agency to be sufficient to justify extending the licence to the entire site.

The tonnage of waste intake for treatment is the quantity of sludge passed forward from the WWTP thickeners to the sludge treatment processes (i.e. to sludge pasteurisation and digestion). The maximum tonnage of sludge to be treated is provided by the applicant as 95,100 tonnes per annum. The principal activity is Class 6 of the Third Schedule: *Biological treatment not referred to elsewhere in this Schedule which results in final compounds or mixtures which are disposed of by means of any activity referred to in this Schedule*. No sludge wastes will be imported for treatment. If at some future date all sludge is sent for recovery purposes then the licence can be surrendered in accordance with Waste Management Acts, as the licensable disposal activity will have ceased.

The facility is located in Co. Kilkenny and approximately 3km east of Waterford City. The 18-hectare site is bordered to the south by the Waterford-Rosslare railway line and the River Suir Estuary, and to the east and west by agricultural land. To the north is land owned by the IDA for a proposed technology park and Belview Port is located 500m to the northeast. The nearest residences are c.200m northwest and northeast of the site. The facility will operate 24 hours/day, 365 days/year. It will be manned by 4 staff on Monday to Friday from 08:00 to 17:00 hrs.

Treated effluent from the WWTP is to be discharged to the Suir Estuary. Control of the impacts of the discharge will be addressed in a Wastewater Discharge Licence for the agglomeration of Waterford City (Reg. No D0022-01) in accordance with the Waste Water Discharge (Authorisation) Regulations, 2007. This licence application is currently under consideration by the Agency. Therefore the impact of the discharge is not directly assessed as part of the RD however the RD does require effective operation and control of the wastewater treatment plant infrastructure.

2. Operational Description

The following is an outline of the process stages and infrastructure:

Preliminary Treatment & Primary Settlement

- Inlet channel and Belview inlet;
- Inlet works building (Preliminary treatment):
 - Automatic 3mm screens, bypass 10mm screen; screening washer & compactor;
 - Aerated grit and grease removal channels (2 no.);
 - Grit classifier, screenings and grit skips;
- Overflow to Storm water tanks (2 no.), in excess of 3 times Dry Weather Flow (DWF);
- Primary settlement tanks, (2 no.) covered.

Secondary Biological Treatment (Activated sludge)

- Selector tank and distribution chamber, uncovered;
- Aeration tanks (4 no.) with air blowers for treatment of activated sludge, uncovered;
- Final settlement tanks (4 no.) for clarification of treated sewage, uncovered;
 - Pumps (4 no.) for recirculation of activated sludge (RAS);
 - Pumps for transfer of surplus activated sludge (SAS) to thickeners;
- Final effluent sampling chamber and wash water pump station (P.S);
- Discharge of final effluent by gravity via a 160m outfall to the Suir Estuary;
- Picket fence thickener for primary sludge thickening;
- Gravity belt thickeners (2no duty/ standby) for secondary sludge thickening.

Sludge Treatment

- Sludge tanks for primary and secondary thickened sludge; Sludge blending tank;
- Sludge pasteuriser tanks and heat exchangers (heating/cooling);
- Anaerobic Digester tanks (2 no.);
- Digested sludge holding tank, uncovered;
- Sludge building (containing gravity belt thickeners, 2no. belt press (duty/ standby) for dewatering digested sludge, hot water boilers (2 no.), generator, controls and switchgear);
- Sludge bio-cake storage containers/skips adjacent to sludge building;
- Biogas collection and gas-holder, and excess gas burner (located west of the storm tanks);
- Liquor returns P.S.; sump and pump (returns prior to primary settlement tanks);

General Infrastructure

- Sites access road, administration building and parking,

There is provision in layout for nutrient removal, aeration tanks, final settlement tanks & digester.

The estimated wastewater load to the wastewater treatment plant (WWTP) is shown in Table 1, from the EIS. The design loading for the year 2025 is 11,295 kgBOD/day, which is equivalent to 188,250p.e (at 60g BOD/head/day). The design Dry Weather Flow (DWF) is 26,000m³/day.

Wastewater flows arrive at the works from Waterford City via the main inlet. The Belview area and the IDA lands to the north are serviced by a separate collection system to the plant. This enters the site near the entrance and is pumped to meet the main inlet. In the inlet building wastewaters are screened prior to grit removal and all flows receive preliminary treatment. The aerated grit and grease removal channels include a grease scraper and collection area. Screenings and grit are transferred to skips within the building. After the inlet works during storm conditions, flows in excess of 3 times DWF overflow to 2 storm water tanks. Where the tanks capacity is exceeded these overflow to discharge with the treated effluent.

Table 1. Estimated Wastewater Load (EIS, 1998)

Estimated Loading (untreated)	Dry Weather Flow (DWF) m³/day	BOD kg/day	Suspended Solids kg/day	P kg/day	Total Kjeldahl Nitrogen kg/day
Present (1998)	18,752	9,045	5,890	244	833
Future (2025) Design year	26,000	11,295	7,906	323	1,079

The flows pass from the inlet works to two primary settlement tanks. The solids (primary sludge) are directed to a picket fence thickener (PFT). The settled wastewater flows via a selector tank to aeration tanks comprising an Inclined Bubble Aeration process. From here the flows are to the final settlement tanks (FST) where the activated sludge flocs are separated from the mixed liquor. The activated sludge (RAS) is recirculated providing the continuous activated sludge process. The surplus activated sludge (secondary sludge) is directed to the gravity belt thickeners. The clarified final effluent passes via a sampling chamber to the outfall. The design effluent standards are 25mg/l BOD, 125mg/l COD and 35mg/l suspended solids.

The thickened primary sludge (from the PFT) and thickened secondary sludge (from the gravity belt thickeners) are transferred to a sludge-blending tank. The maximum tonnage of sludge to be treated is 95,100tpa or 260t/day.

Table 2. Quantities of Sludges Generated and Sludge Bio-cake produced

	% Solids	Tonnes/day	Tonnes/year
Primary (thickened) sludge	6	107.8	39,347
Secondary (thickened) sludge	5	152.8	55,753
Total	5-6	260.5	95,100
Sludge bio-cake	23	41.1	15,002

The blended sludge is pumped to pasteuriser tanks with a retention time of 4 hours at 55°C, to eliminate pathogens. The pasteurised sludge then feeds to the digesters via a heat exchanger system. The pipe work design enables heat loss from the sludge or cooling by wash waters, e.g. in warm weather. Hot water is pumped from the two boilers to the pasteuriser in a loop system.

The anaerobic digesters are sealed tanks where the organic matter is broken down by microbes in the absence of oxygen to produce biogas and a digested sludge. The total volume is 3,442m³ and the operating temperature is 35°C i.e. mesophilic conditions. There is a continuous flow of sludge in and out of the digesters, however the 'spot' retention time is 14 days. The biogas, which is capable of being combusted, is directed to the boilers, with the excess (unused) gas flared. **Condition 6.1** requires a test programme for the anaerobic digesters. Schedule C.2.1 sets out control parameters including in-tank monitoring for level, temperature and flow rate. Also the EMS in **Condition 2.2.2.9** shall include a programme to ensure adequate process control including in particular the anaerobic digesters.

The digested sludge is directed to a sludge holding tank. It is pumped to one of two dewatering belt presses to produce a sludge bio-cake of minimum 23% dry solids. The bio-cake (41.1 t/day) is to be loaded into containers adjacent to the sludge building via an enclosed conveyance system. This is to be disposed to landfill.

Return liquors which are typically high organic strength arise from: the odour control units, FST, PFT, sludge tank overflows, gravity belt thickeners, digesters, gas condenser, polymer overflow and sludge dewatering. The liquors (average 185m³/hr) are directed to the liquor returns pumping chamber and returned to the primary settlement tanks.

3. Use of Resources

- Electricity - The predicted demand for everyday operation of the plant is 3,178.6kW. All pumps and plant items including air blowers operate on a duty/standby basis.
- Biogas – Biogas produced will fuel the two hot water boilers, with diesel as a backup. The anaerobic digestion process will produce approximately 2,208.3 MJ/hr (0.6 MW).
- Water- The sources are final effluent reuse, service water from an IDA borehole and potable water. Wash water (estimated 40m³/day) is to be pumped from the final effluent chamber for use in the odour control units, polymer make up, boiler top up and internal hose points. The IDA has installed a borehole on their lands north of the facility to supply a proposed business park, with a spur to the WWTP facility. This is proposed by the applicant as a temporary supply until a mains supply is extended to the area. Potable water will be in bottled form.

With regard to reducing the Climate impact of the facility, the RD requires an energy efficiency audit and an assessment of resource use efficiency. The EMP objectives and targets include use of cleaner production (including production related carbon footprint).

4. Emissions

Emissions to air including odour are likely to arise as a result of activities on-site. Areas, which are susceptible to odour generation i.e. the inlet works and sludge treatment, will be enclosed and operated under negative air pressure with gases conveyed to on-site abatement. Other emissions to air are from the boilers and the waste gas burner. There is the potential for noise emissions, which are controlled by enclosure or housing of equipment. Emissions from the facility shall be controlled in the RD through *Schedule C: Control and Monitoring*.

4.1 Emissions to Air

Odour

The most odorous areas of the facility have been identified as the inlet works and the sludge treatment area and tanks. It is proposed to house or cover equipment associated with these areas. The inlet and sludge buildings will be enclosed and operated under negative air pressure to prevent odour escape. All odorous air from the buildings and covered tanks will be collected and directed to the abatement system. The odour control units have a biological media (biofilter), droplet eliminator, exhaust fans, and a carbon filter. They are designed to achieve a 99% H₂S reduction, equivalent to 95%-97% odour removal. The treated air is emitted at high velocity by stacks. The areas and items of plant directed to abatement are:

OCU-1: Primary settlement tanks (PST), Inlet building and individual plant (pre-screen and post grit channels, fine screens, compactors, grit classifier, screenings/ grit skips).

OCU-2: Sludge building, pasteuriser, picket fence thickener, sludge blending tank, emergency sludge tanks, sludge cake skip, and liquor returns pump station.

The inlet building has an electrically controlled roller shutter door and collection skips will be housed indoors. There is no vehicle access to the sludge building, with doors only for employee access. From 2 to 18.7 air exchanges per hour are specified for items of plant within the inlet works. For the sludge works the number of air exchanges range from 2 to 6.

Potential emissions from release valves and sumps are considered to be minimal and abatement is not considered necessary. During anaerobic digestion odorous components are broken down in an enclosed system, therefore the digesters are not considered an odour source. The selector tank, aeration tanks and final settlement tanks, are uncovered, however these processes are not generally considered to be a source of significant odour. Condition 6.16.3 requires the digested sludge holding tank to be covered if required.

Impact of Odour Emissions on the Receiving Environment

An odour dispersion model (ADMS 3.3) was used to predict odour emissions from the facility. The model predicted the maximum odour concentrations at the site boundary and at the nearest sensitive receptors. Meteorological data was from Rosslare Met. Station, as it records hourly data. Five years data from November 2001 to October 2006 were considered. The wind rose indicates that the prevailing wind is from a southwesterly direction. The sources input to the model were: the odour control stacks, Belview pump station, storm tanks, selector and aeration tanks, final settlement tanks and the digested sludge holding tank. The abatement is designed so that the air discharges would not increase the short-term odour concentration by more than 3 ou_E/m³ as the 95th percentile, and by more than 5 ou_E/m³ anytime.

The model output showed that, under normal operating conditions; the contours for 3ou_E/m³ as a 95th percentile and 5ou_E/m³ anytime (each as 1-hour averages) did not extend to, or beyond the site boundary. Also the contours for 0.3ou_E/m³ (95th percentile) and 0.5ou_E/m³ (anytime) did not extend to the nearest receptors, indicating these levels would not be exceeded. The 99.5th percentile predictions for the sensitive receptors are less than 0.6 ou_E/m³, i.e. for 99.5% of the year odour concentrations would be less than or equal to 0.6ou_E m³ (as an hourly average). The modeling report concluded that odour abatement followed by dispersion would be sufficient to prevent odour nuisance from occurring outside the facility. It is also noted that the EIS in 1998

predicted that for over 99.5% of the time the short-term (10-15 minutes) odour concentrations at receptors would be less than $0.5\text{ou}_E/\text{m}^3$.

The commonly applied ELV for odour is $\leq 1.5\text{ou}_E/\text{m}^3$ (98th percentile, 1-hour average) above background concentrations at the nearest sensitive receptor. UK guidance¹ applies this criterion for wastewater treatment works and it is also applied by the Agency for the intensive agriculture sector. The predictions by the model are significantly below the $1.5\text{ou}_E/\text{m}^3$ limit value and therefore it is considered unlikely that odour emissions from the facility will cause a nuisance.

The RD in **Condition 6.16** requires submission of an odour management programme. Also odour control measures to be implemented are specified and an odour assessment is to be undertaken as required by the Agency. **Condition 6.1** requires a test programme for the odour abatement. Schedule B.1 sets ELVs for the odour units for ammonia, amines and hydrogen sulphide (H_2S) and mercaptans. Continuous H_2S monitoring is required on the biofilter inlet and outlet.

The licensee will also be required to comply with the European Communities (Waste Water Treatment) (Prevention of Odours and Noise) Regulations S.I. No. 787 of 2005 to avoid causing nuisance from odours or noise emissions.

Emissions to Air

Boilers 1 and 2 (each 625kW) provide hot water for pasteurization. The emission points are A-01(a) and A-01(b). The boilers are operated on biogas and are on duty/assist basis. Diesel will be used when biogas is not available, however this is expected only on rare occasions. Diesel is to be used for the plant standby generator, where the electricity supply is interrupted.

The biogas composition is methane (60-65%), carbon dioxide (30-35%), and hydrogen sulphide (0-2,000ppm). It has an energy value of $22.5\text{ MJ}/\text{Nm}^3$. The gas is stored in a 200m^3 gas-holder to buffer peaks in production. Gas production is estimated at $3,776\text{m}^3/\text{day}$. An ultrasonic detector computes the gas volume. The holder is constructed of two reinforced fabric membranes. The external membrane is inflated by two blowers to maintain a constant air pressure, which maintains the internal gas pressure. Gas is drawn to the boilers with water condensing in the pipe work and drained to a condensate trap. Biogas scrubbing was not considered necessary as the gas is methane (CH_4) and not hydrogen sulphide (H_2S). In Schedule B.1, boiler emissions limits for particulates and SO_x are based on the TA Luft Standard (2002), while limits for NO_x and CO are based on the proposed emission concentrations in the application. Schedule C.1.2 requires annual monitoring including combustion efficiency.

A low level gas burner (enclosed) is used to burn off surplus biogas. It is identified in the application as a minor emission (A-02). The applicant expects its use to be limited due to a high demand for hot water. If the biogas level in the gasholder exceeds a set point the burner starts. In order to reach sufficient temperature ambient air (combustion air) is added. The burner temperature is provided as typically $1000\text{-}1,100^\circ\text{C}$ at the nozzle with an exit temperature of $500\text{-}600^\circ\text{C}$. The BREF for Waste Treatments Industries (2006) requires that when flaring surplus biogas the outlet temperature of the flue-gas should be at a minimum temperature of 900°C and a residence time 0.3 sec. This is required in **Condition 3.20**.

Schedule C.1 requires continuous monitoring of combustion temperature and CO and annual monitoring on the inlet and outlet of the biofilters. Fugitive emissions are possible from emergency vent valves and from poorly sealed water traps. **Condition 6.9** requires a programme for the reduction of fugitive emissions including bioaerosols. The wastewater treatment process can be a source of airborne pathogens. The aeration tanks are uncovered but use submerged rather than surface aeration, which reduces the risk of bioaerosol generation. Also processes including the inlet works, primary settlement and sludge treatment are enclosed.

¹ IPPC Guidance Note H4: DRAFT Horizontal Guidance for Odour, Part 1 Regulation and Permitting. Environment Agency (2002).

Impact of Air Emissions on the Receiving Environment

An assessment of baseline air quality in the region was carried out by using EPA monitoring data from the "Air Quality Monitoring Annual Report 2006" (EPA, 2007). Waterford City is classed as Zone C and conservative estimates of 2008 background concentrations are 15ug/m³NO₂, 5ug/m³SO₂, 0.5ug/m³ benzene, 0.5ug/m³ CO, 20ug/m³ PM₁₀ and 12ug/m³ PM_{2.5}. These are below ambient air quality limit values. The EIS concludes that there will be no significant impacts on air quality due to operation of the facility. The emissions to air (excluding odour) are considered to be minor.

4.2 Noise

Plant items with the potential to generate noise include pumps, fans, motors and compressors with many operated 24 hours/day. The site is in a semi rural location but close to an industrial area. A noise survey was carried out 13th-14th March 2007 at 5 noise-sensitive locations and 7 boundary locations. Daytime measurements ranged from 39-52dB(A) L_{Aeq} at the site boundary and from 37-61dB(A) L_{Aeq} at receptors. Night time levels were from 37-40dB(A) L_{Aeq} at the boundary and 37-50dB(A) L_{Aeq} at receptors. The audible noise sources were mainly traffic and birdsong in daytime and traffic and Port activities at night. Noise modeling using *Bruel & Kjaer 7810 Predictor* was carried out. Predicted night time levels at the boundary were below the criterion of 45dB(A) L_{Aeq}. The report concluded that noise from the facility may be audible during quiet periods at some locations, but is not expected to be unduly intrusive.

Abatement measures include fitting air blowers with acoustic enclosures to reduce noise emission levels from 100 to 70dB(A). Other plant and equipment are enclosed within buildings. Standard noise limits and conditions have been included in the RD, i.e. daytime 55dB(A) and night-time 45dB(A), to be met at the boundary. The applicant will be required to conduct a noise survey annually in accordance with Agency Guidance.

4.3 Emissions to Sewer

There will be no emissions to sewer, i.e. to sewer outside the site boundary. Sanitary effluent from toilets in the sludge building will be directed to the return liquors area. Sanitary effluent from the administration building is directed to the Belview sewer, which joins at the inlet works.

4.4 Emissions to Surface Waters

Treated effluent from the facility is to be discharged to the Suir Estuary. Emission limits and monitoring requirements for this discharge will be set out under the remit of a wastewater discharge licence.

The RD sets out requirements for monitoring and control of the wastewater and sludge treatment processes. The facility operations will be monitored and controlled 24 hours a day 7 days by a Supervisory Control and Data Acquisition (SCADA) system. There will be no laboratory facilities on site. **Condition 3.6.3** requires that adequate capacity be maintained within the wastewater works, sludge treatment works or an individual process stage, to ensure that there is no risk to the receiving environment. **Condition 3.6.4** requires that the quantity of sludge to be transferred to treatment shall not exceed the duty capacity of the equipment.

Condition 6.1 requires a test programme for the WWTP and Schedule C.2.1 sets out control parameters for each stage of the wastewater and sludge process. Influent COD will be monitored daily with a relationship with BOD to be established. As per **Condition 6.8** monitoring requirements may be amended following evaluation of results. The requirements of the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001), amended in 2004 in relation to treatment standards, and monitoring must also be met.

4.5 Storm Water Runoff

Road runoff is collected via two swales to the north of the site. Runoff from other impermeable areas (but excluding the sludge treatment area) also drain to the storm system. There is no wheel wash proposed. The storm water discharges to an unnamed stream at the southeast corner of the

site (at SW-01) at the confluence with the River Suir. The normal volume to be emitted is provided as 7,171m³/day. **Condition 3.13** requires a Class 1 bypass separator prior to discharge.

The sludge treatment area is to be bunded with drainage directed to the return liquors system. The bunded area is approximately 90m x 40m x 1.5m. **Condition 3.11** requires an impermeable surface to be maintained to ensure that any spillages do not enter the soil or groundwater beneath or adjacent to the site. **Condition 3.15** requires high-level alarms on the digesters, sludge-blending tank, and sludge storage tanks. There are two 10,000litre diesel tanks beside the sludge building and **Condition 3** includes standard requirements for bunding. It also requires a risk assessment to determine if the development requires a firewater retention facility.

4.6 Emissions to Groundwater

There will be no direct emissions to groundwater, however some of the water directed to the swales will percolate to ground. The geology consists of shales and siltstones and the depth to bedrock ranges from 3.8m to 16.6m below ground level in the vicinity of the site. The bedrock aquifer has been given a Groundwater Protection Zone classification of Rf/M – Regionally Important of Moderate Vulnerability by the GSI. The application refers to well records within a 3km radius of the site showing yields ranging from moderate to excellent.

The proposed water source for the facility is a borehole installed by the IDA on their lands to the north of the site. The applicant states that the IDA has permission to abstract approximately 10,100 gallons per hour (c.38m³/hr) and that the required supply will be available for the facility. There are no boreholes onsite and **Condition 6.14** requires a down-gradient groundwater monitoring point to be installed at a location to be agreed.

4.7 Emissions to Ground

In the application sludge bio-cake is to be landfilled, however the applicant envisages that over time, it is hoped that the majority will be recovered by landspreading on agricultural land providing a suitable landbank can be found. Conditions for landspreading have been included in the RD (**Condition 8.17**), however the licensee is required to obtain prior agreement from the Agency. Schedule C.4 and C.6 set out sludge and soil sampling and analysis. The Waste Management (Use of Sewage Sludge in Agriculture) Regulations, S.I. 148 of 1998 and S.I. 267 of 2001 must be complied with. **Condition 8.17** also requires information to be submitted to the relevant Local Authority for the Sludge Register.

5. Wastes Generated & Material Handling

The wastes generated are sludge bio-cake (41.1t/day), screenings, grit, grease, mixed municipal waste, paper/card and plastic. No hazardous waste is generated. In **Condition 8.11** sludge bio-cake intended for landfill shall be pre-treated/stabilised to the extent that Respiration Activity after four days (AT4) is <10 mg O₂/g DM. This is to permit compliance with the Landfill Directive.

Sludge bio-cake skips will be filled via an enclosed system, covered and located in a skip storage area adjacent to the sludge building. **Condition 8.12** requires the bio-cake to be taken off-site daily and **Condition 8.13** requires a system to be installed to prevent skip overfilling. **Condition 8.9** requires procedures to be established for management of the sludge treatment process and the handling of contaminated sludges. **Condition 3.21** requires a weighbridge to be installed.

Screenings from dewatering (5% of the total screenings generated) will be stored at the sludge building. Inlet works screenings and grit are to be stored in the Inlet building prior to removal to landfill. The means of recovery or disposal of grease will be determined during commissioning and **Condition 8.15** requires proposals to be submitted within 3 months. **Condition 8.10** requires that any waste to be consigned direct to landfill be pre-treated in accordance with the requirements of the Landfill Directive.

The EIS refers to treatment of grease in the anaerobic digesters and the applicant has stated that this remains an option. The proposals for recovery or disposal of grease are to be submitted to the Agency for agreement. Approximately 2.4 tonnes/week of polyelectrolytes (PLF1700Q & PLF2800Q) are to be used in sludge thickening and dewatering. These are the only chemicals used in the process.

6. Cultural Heritage, Habitats & Protected Species

The EIS (1998) refers to marsh areas east of Belmont house (1km upstream of the facility), and at Island View (south of Little Island), which were then in the process of being designated as Natural Heritage Areas. These have since been superseded by the designation of the Lower River Suir as candidate Special Area of Conservation (cSAC) under the Habitats Directive (Site code 002137). The facility boundary, overlaps with the cSAC boundary along a narrow strip of the site parallel to the railway line. It is acknowledged in the application that construction of a hardcore road at the south-eastern corner of the site (to facilitate construction of the outfall) did encroach upon the edge of the cSAC. Condition 11.14 requires that the National Parks and Wildlife Service be consulted prior to further development in the southern area of the site. The waste infrastructure does not impinge on the designated area and there will be no impact during operation of the facility.

Other designated areas in the vicinity are the River Barrow and Nore cSAC (002162) that joins the River Suir less than 5km downstream of the facility. Also the King's Channel, less than 3km upstream is a proposed Natural Heritage Area under the Wildlife Act 1976 as amended in 2000. The activity will not impact on these designated areas. The discharge of treated effluent to the Lower River Suir will be addressed in a wastewater discharge licence for Waterford City.

7. Waste Management, Air Quality and Water Quality Management Plans

The Joint Waste Management Plan for the South East Region (2006 -2010) includes data on municipal sludges arising. Under the Waste Management Act Local Authorities are required to prepare Sludge Management Plans, which are considered a subset of the Regional Waste Plan.

8. Environmental Impact Statement

I have examined and assessed the EIS and having regard to the statutory responsibilities of the EPA, I am satisfied that it complies with Article 94 and Schedule 6 of the Planning and Development Regulations 2001 (S.I. 600 of 2001) and EPA Licensing Regulations (S.I. 85 of 1994, as amended).

9. Best Available Techniques (BAT)

I have examined and assessed the application documentation and I am satisfied that the site, technologies and techniques specified in the application and as confirmed, modified or specified in the attached Recommended Decision comply with the requirements and principles of BAT. The Integrated Pollution Prevention and Control (IPPC) Reference (BREF) Document on Best Available Techniques (BAT) for the Waste Treatments Industries (August 2006) has been referred to. I consider the technologies and techniques as described in the application, in this report, and in the RD, to be the most effective in achieving a high general level of protection of the environment having regard - as may be relevant - to the way the facility is located, designed, built, managed, maintained, operated and decommissioned.

10. Compliance with Directives/Regulations

Water Framework Directive (2000/60/EC)

The process discharge to water will be assessed and regulated under a wastewater discharge licence (Reference D0022-01) and compliance with the WFD and other Directives/Regulations will be addressed as part of the discharge licensing process.

Urban Waste Water Treatment Directive (91/271/EEC)

The agglomeration was not compliant with the Urban Waste Water Treatment Regulations, 2001 (S.I. No. 254 of 2001) in 2006, as secondary treatment was required by 31st December 2000. The proposed wastewater treatment plant will meet requirements of the Directive.

Air Quality Directive (1999/30/EC)

According to the documentation supplied, background concentrations are within the relevant Air Quality Standards. The RD requires all equipment to be properly maintained and combustion efficiency testing is to be undertaken.

Environmental Liabilities Directive (2004/35/EC)

The RD as drafted, Condition 12.2, satisfies the requirements of the Directive.

12. Fit & Proper Person Assessment

As specified under Section 40(4)(d) of the Waste Management Acts 1996 to 2008, the 'Fit and Proper Person' criteria does not apply in the case of an application for a waste licence from a Local Authority.

13. Proposed Decision

The most significant environmental risks posed by this proposal are odour, noise and water emissions. The RD incorporates a number of conditions specific to this site aimed at ensuring that risks to the surrounding environment are minimised. In order to mitigate against potential odour impacts the most odorous activities shall occur indoors in areas operated under negative pressure, with all off-gases to be passed through the on-site biofilters. Also a detailed odour management programme is required. With regard to noise, the RD specifies noise limits to be achieved at the boundary of the facility. Also a number of conditions and Schedule C.2.1.(Control of Process Parameters) specify requirements for monitoring and operation of the wastewater treatment and sludge treatment processes. The process emission to water, i.e. the discharge of treated effluent will be regulated under a wastewater discharge licence for Waterford City.

I am satisfied that the conditions set out in the RD will adequately address all emissions from the facility and will ensure that the carrying on of the activities in accordance with the conditions will not cause environmental pollution.

14. Submissions

No submissions have been made in relation to this waste licence application.

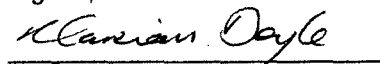
15. Charges

The RD proposes an annual enforcement charge of €9,225.00.

16. Recommendation

In preparing this report and the Recommended Decision I have consulted with Agency technical and sectoral advisors Dr. Ian Marnane, and Dr. Jonathan Derham. I have considered all the documentation submitted in relation to this application and recommend that the Agency grant a licence subject to the conditions set out in the attached RD and for the reasons as drafted.

Signed,



Marian Doyle

Procedural Note

In the event that no objections are received to the Proposed Decision on the application, a licence will be granted in accordance with Section 43(1) of the Waste Management Acts 1996-2007.