


This Report has been cleared
for submission to the Board
by Frank Clinton

Signed  Date 30/6/10.



OFFICE OF CLIMATE,
LICENSING & RESOURCE USE.

ADDENDUM A

TO INSPECTORS REPORT ON A WASTE WATER DISCHARGE LICENCE APPLICATION

To:	Directors		
From:	Patrick Byrne	Environmental Programme	Licensing
Date:	30 th June 2010		
RE:	Application for a Waste Water Discharge Licence from Dublin City Council for the Greater Dublin Area Agglomeration, Reg. No. D0034-01.		

Application Details	
Schedule of discharge licensed:	Discharges from agglomerations with a population equivalent of more than 10,000.
Licence application received:	14/12/2007
Additional Information received:	12/02/2009
Notices under Regulation 18(3)(b) issued:	19/03/2008
Information under Regulation 18(3)(b) received:	28/07/2008 & 27/04/2009
Notice under Regulation 20(1):	27/11/2008 & 13/10/2009
Information under Regulation 20(1) received:	23/12/2008, 27/04/2009 & 20/01/2010
Site notice check:	29/12/2007
Site visit:	19/02/2008 & 14/11/2008
Submissions Received:	<ul style="list-style-type: none"> • Mrs. Catherine Cavendish (addressed in report dated 2nd September 2009); • Eastern Regional Fisheries Board; • Eurolaw Environmental Consultants; • Mr. Peter Fegan.

This report, Addendum A, is supplementary to the Inspectors Report dated 2nd September 2009. It clarifies items raised at the Board meeting of the 8th September 2009 and also considers additional information received from the applicant, on the

20th January 2010 and submissions received since the Board meeting. This addendum includes recommendations which amend the Recommended Licence considered by the Board of the Agency at their meeting of the 8th September.

The Board of the Agency considered the Inspectors Report (dated the 2nd September) and Recommended Licence at a Board meeting on the 8th September 2009. A number of items were identified by the Board as requiring clarification by the Inspector. Following the Board meeting the Agency sought additional information from the applicant (Dublin City Council) under Regulation 20(1) of the Waste Water Discharge (Authorisation) Regulations 2007 (letter dated 13th October 2009). The applicant provided additional information, received by the Agency, on the 20th January 2010.

Summary of Information Submitted subsequent to Board Meeting of 8th September 2009

The information sought under Regulation 20(1), included:

- copy of the report previously referred to as an 'Extension Design Review Report';
- *Identification of your {Dublin City Council's} preferred option for upgrading works which will be undertaken at the Ringsend Waste Water Treatment Facility;*
- *an impact assessment of the discharge associated with your {Dublin City Council's} option for the Ringsend Waste Water Treatment upgrade;*
- additional environmental monitoring information; and
- a prioritisation list of storm water overflows (including emergency overflows) for upgrading.

Dublin City Council's response included a cover letter which addressed the prioritisation of storm water overflow upgrades and the following reports in relation to Ringsend Wastewater Treatment Works:

- Design Review Report;
- Preliminary Assessment of Long Sea Outfall Locations;
- Gantt Chart;
- Dublin Bay Survey – Data Summary; and
- WWTP Performance - December 2008 through November 2009.

Design Review Report

The report identifies that the existing waste water treatment plant (WWTP) at Ringsend is receiving a loading in excess of the design capacity of the facility. The current load to the WWTP is 1.79 million p.e. (107 tonnes/day of BOD), whereas the design capacity is 1.64 million p.e. Based on the Applicants predictions they require a design load of 2.2 million p.e. for 2025. The peak loading, defined as the maximum weekly load received at the plant, varies considerably and reached 3.69 million p.e. in 2008 (end of August). In addition it is noted, by the Applicant, that the existing discharge into the River Liffey Estuary requires the discharge to comply with the Urban Waste Water Treatment (UWWT) Regulations 2001 to 2010 in relation to total nitrogen and total phosphorus in the effluent emission.

The report assesses the capacity of the existing WWTP (sequence batch reactors) to achieve BOD, nitrogen and phosphorus removal and also additional treatment options that could be added to the existing WWTP to meet the limits specified in the UWWT Regulations (BOD, 25mg/l, COD 125mg/l, suspended Solids 35mg/l, total nitrogen 10mg/l and total phosphorus 1mg/l).

The existing WWTP is limited by the aeration capacity available (required for both BOD and nitrogen removal), in particular it is identified that the capacity of the blowers, air piping and the diffusers are limited. It is calculated that the capacity of the existing sequence batch reactors could be increased to the proposed design capacity (2.2 million p.e) for BOD removal. However, there would not be enough aeration capacity to treat the influent (BOD) from 2.2 million p.e. and achieve an effluent with less than 10mg/l of total nitrogen (extra aeration would be required).

The Design Review Report considered additions and/or re-configuration of the existing WWTP, in terms of (1) effluent treatment capacity, (2) available site space, (3) cost of construction, (4) operational costs and (5) outfall locations. The consideration included the following treatment options:

- Chemically enhanced primary treatment (CEPT);
- Sidestream treatment, including:
 - Oxidation of ammonia nitrogen to nitrite and then to nitrate.
 - Single High-Activity Ammonia Removal over Nitrite (SHARON); and
 - Anaerobic Ammonium Oxidation (Anammox) and De-Ammoniafication (DEMON) processes.
- Ballast Flocculation to treat storm water flows;
- Denitrification filters;
- Conventional activated sludge;
- Membrane bio-reactors;
- Deep shaft aeration processes;
- Integrated fixed – film activated sludge;
- Biological Filters; and
- Phosphorus removal.

The identified combinations of the above treatment options to achieve nutrient removal, compatible with continued discharge into the River Liffey Estuary, include:

- Deep shaft aeration with conventional primary treatment;
- Deep shaft aeration with chemical enhanced primary treatment (CEPT);
- Deep shaft aeration with sidestream treatment;
- Deep shaft aeration with CEPT and sidestream treatment;
- Membrane bioreactors with CEPT; and
- Membrane bioreactors with CEPT and sidestream treatment.

The cost to construct and operate facilities that would provide nutrient removal in addition to secondary treatment at Ringsend for the 2.2 million p.e. design load are calculated to have a present worth of €211 to 244 million. Due to site restrictions the processes required to do so are unproven at the scale required for Ringsend.

Subsequently, the report considers alternative outfall terminus locations that would achieve designated water quality criteria with the discharge treated to secondary

standards, but without nutrient removal. The discharge flow and loading are based on a 2.2 million p.e. design load (Flow 13.8m³/s, Ammonia Nitrogen (NH₃-N) 5mg/l, Dissolved Inorganic Nitrogen 22mg/l, Molybdate Reactive Phosphorus (MRP) 3.6mg/l, and Faecal Coliform 140,000MPN (most probable number)/100ml).

Five locations were initially identified for consideration and a 3-dimensional model of each location was completed. The model considered the impact of the predicted discharge on water quality in terms of the European Communities Environmental Objectives (Surface Water) Regulations 2009, Water Framework Directive and Bathing Water Quality Regulations. The model and report determined that outfall locations (termini) identified as '3' and '4' show the least impacts. The impact of these two termini are further considered by the applicant in the report submitted to the Agency entitled 'Preliminary Assessment of Long Sea Outfall Locations'. The cost of the long sea outfall, associated upgrading of the existing WWTP and operating costs are calculated to be between €176 to 218 million, based on a tunnel¹ of between 7.5 to 10km in length and a diameter of 5 metres.

Comparison of other factors (non-cost factors, i.e., water quality, reliability, ease of operation, maintenance) are considered for the identified combination of treatment options and provision of a long sea outfall. The overall recommendation from the report is that secondary treatment with an ocean outfall discharge is the low cost alternative, it also consumes less energy and chemicals and produces less sludge and greenhouse gases. It requires no new unit processes and is therefore, much simpler to operate and maintain. It is considered the low risk alternative. The report acknowledges that the discharge, while not treated to the same levels as the other alternatives, would meet water quality standards and be protective of existing Natura 2000 sites and bathing waters. In conclusion the report notes that pending completion of an Environmental Impact Assessment (EIA), it appears that providing secondary treatment with an ocean outfall discharge would be the most beneficial option for the Ringsend WWTP extension.

Preliminary Assessment of Long Sea Outfall Locations

The preliminary assessment is to consider the long sea outfall options (Location 3 and Location 4 as per Figure 1 below) with respect to the Environment Objectives (Surface Water) Regulations 2009, the Bathing Water Regulations 1992 and 2008, the Dublin Bay Water Quality Management Plan priority objectives and to carry out a preliminary ecological assessment of the potential impact on the Natura 2000 sites (SAC, SPA and bathing waters) around Dublin Bay.

More detailed consideration and modelling of the discharge via long sea outfall will be undertaken as part of the EIA process. The preliminary assessment completed (model of the proposed discharge) shows that apart from a mixing zone in the vicinity of the outfall points the receiving waters will meet the Environmental Quality Objectives for coastal water nutrients (dissolved inorganic nitrogen). The assessment establishes that there will be no deterioration in the bathing water quality in the Dublin area, and quality is expected to improve as a result of the ceasing of discharge to the Liffey Estuary. Appropriate ecological assessments, in accordance with Article

¹ The Proposal is to construct the outfall pipeline as a tunnel due to the large diameter necessary (pipeline hydraulics) and the Applicant's intent to minimise impacts to the marine environment.

6 of the Habitats Directive were undertaken for both proposed outfall locations, no significant effect on Natura 2000 sites are predicted.

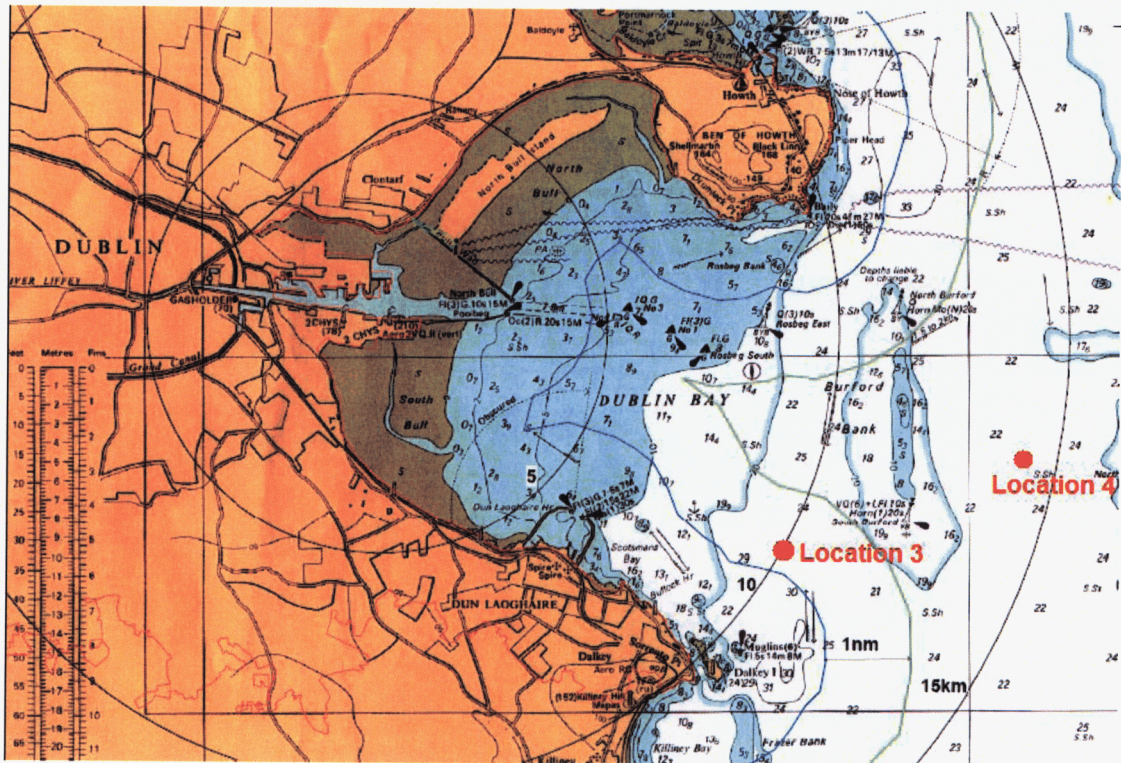


Figure 1. Proposed Long Sea Outfall Locations

Gantt Chart

Dublin City Council submitted a Gantt chart which provides anticipated timeframes towards implementing the upgrade of Ringsend WWTP. While many of the target dates in the Gantt chart are subject to further consideration of options, completion of an environmental impact assessment, regulatory approval for the upgrade, funding approval etc., they provide a broad overview of the timescale envisaged as necessary to implement the upgrade of Ringsend WWTP. Notable dates from the chart include: submit EIS to An Bord Pleanála October 2010, construction at the WWTP commencing in December 2012 and completion in October 2014, construction of long sea outfall commencing in July 2012 and completion in December 2014.

Dublin Bay Survey – Data Summary

Dublin City Council had a water quality survey of Dublin Bay and its estuaries completed over a 12 month period from December 2008 through to November 2009 to establish the level of nutrients in the waters. The locations of the sampling points are shown in Figure 2 below.

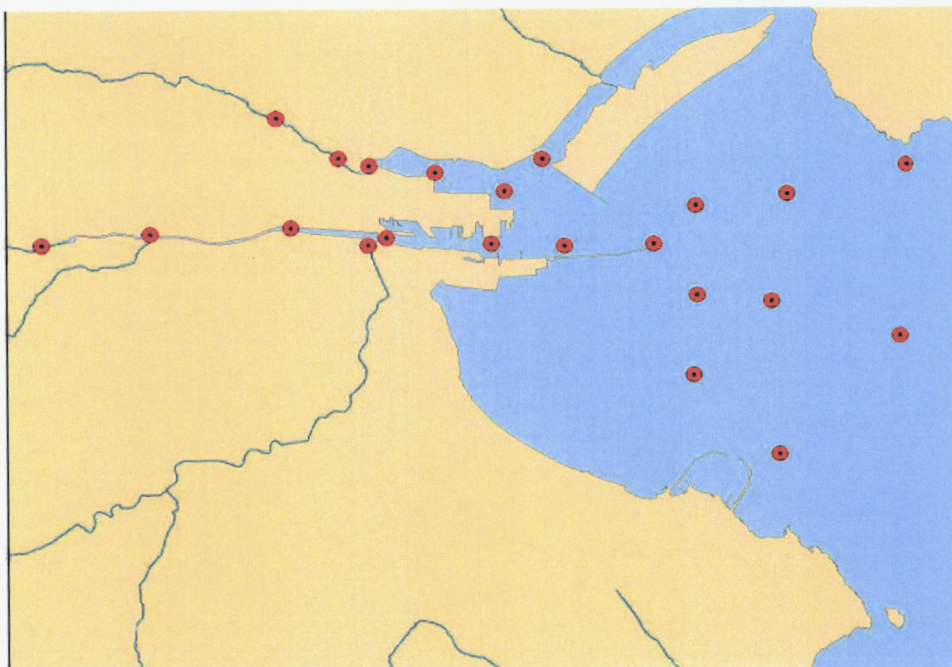


Figure 2. Water Quality Sampling Locations

Based on the sampling undertaken the DIN concentration in the bay is generally at levels within the standard for 'good status' ($250\mu\text{g/l}$ for coastal water bodies) as specified in the European Communities Environmental Objectives (Surface Water) Regulations 2009. During extreme rainfall events the discharge from the estuaries and other onshore sources cause occasional concentration elevations.

The molybdate reactive phosphorus (MRP) concentrations in the estuaries are often at levels in excess of the standards specified for transitional waters in the European Communities Environmental Objectives (Surface Water) Regulations 2009 ($60\mu\text{g/l}$ MRP for salinity up to 17 practical salinity units (psu) and $40\mu\text{g/l}$ MRP for salinity up to 35psu). The monitoring results for Dublin Bay and estuaries, therefore, have to be compared to the relevant standards as follows:

- for fresh water in the upper estuary – an ambient standard of $60\mu\text{g/l}$ applies, and
- for Dublin Bay – an ambient standard of $40\mu\text{g/l}$ applies.

The Ringsend WWTP discharge has a significant impact on water close to the works, but concentrations are elevated throughout the Liffey and Tolka Estuaries. The levels recorded vary between each survey period and, other than the primary discharge from the WWTP, no other significant point sources are evident.

WWTP Performance – December 2008 through November 2009

The Ringsend WWTP was designed to meet the requirements of the Environmental Protection Agency Act, 1992 (Urban Waste Water Treatment) Regulations 1994, these regulations did not designate Liffey Estuary (receiving water for the primary discharge) as 'sensitive' and therefore the effluent standards for the WWTP were set as:

- BOD 25mg/l
- COD 125mg/l
- Total suspended solids 35mg/l ; and

- Ammonia (N) 18.75mg/l

Table 1 below summarises the effluent discharge from the Ringsend WWTP during the period December 2008 and November 2009 with respect to the WWTP design effluent standards.

Table 1 Final Effluent Quality (mg/l) for the period 01/12/08 to 30/11/09

	BOD	COD	TSS	NH3-N	TKN	TN^{Note 2}	TP^{Note 3}
No. of Samples	258	262	364	248	236	172	93
Average	17.4	68.5	31.7	3.2	7.2	15.8	3.5
No. of non-compliant samples ^{Note 1}	33	12	81	0			
% Compliance with 95%ile limit ^{Note 1}	87%	95%	78%	100%			
95%ile Limit	25	125	35	18.75			

Note 1: Compliance compared to the WWTP Design Effluent Standards.

Note 2: Effluent Total Nitrogen not measured by contractor on a regular basis – results from DCC Central Laboratories presented (NO3+NO2+TKN)

Note 3: Effluent total phosphorus not measured by contractor on a regular basis – results from DCC Central Laboratories presented.

The Liffey Estuary has been designated as ‘sensitive’ in the UWWT Regulations 2001 and the nutrient standards for Total Nitrogen (N) 10mg/l and Phosphorus (P) 1mg/l are therefore applicable. The current WWTP is not capable of achieving these standards of effluent.

Disinfection of the effluent discharge is provided from 1st May through 31st August annually. Out of a total of 71 samples taken, post ultra violet (UV) treatment, there were two exceedences of the design parameter of 100,000 MPN/100ml during the 2009 bathing water season.

For the period 1 December 2008 to 30 November 2009 there were 25 spills to the Liffey Estuary from the Ringsend storm water tanks (SW2Dublin). Eleven of these occurred during November 2009². On the days when spills occurred from the storm tanks up to 99% of the influent flow arriving at Ringsend received treatment in the WWTP prior to discharge, therefore storm overflow accounted for a very small percentage of the total influent received at Ringsend on that day.

Prioritisation of Storm Water Overflows for Upgrading

The applicant identifies that prioritising of storm water overflows for upgrading works is part of the output from the capital works programme. The capital works programme is funded by the Department of Environment, Heritage and Local

² November 2009 is notable for the high rainfall recorded and the consequent severe flooding experienced in many parts of the country. Met Éireann, Report on Rainfall of November 2009.

Government by means of the Water Services Investment Programme. There is currently a focus on the city centre catchment. The first stage of the project will involve carrying out a water quality study of the receiving waters, in combination with a flow survey within the network. A strategy to address the potential impacts from storm water overflows will be the next stage and ultimately leading to improvement/upgrading works within the catchment.

The criteria for project selection has been based on a Department of Environment, Heritage and Local Government circular L2/06. The criteria include: relevant national and EU environmental, public health and drinking water quality statutory requirements and standards; and the adequacy of existing collection networks and in the case of anticipated development, the adequacy of existing treatment plants. A revised criteria for project selection was issued in July 2009 (Circular L6/09). These criteria further emphasise the importance of environmental compliance, i.e., works required in response to European Court of Justice (ECJ) judgements, contracts and schemes concerned with meeting statutory environmental or public health requirements (e.g. Drinking Water Regulations, Urban Waste Water Treatment Regulations, Wastewater Discharge Authorisation Regulations, Bathing Water Regulations, etc.) and works in the context of compliance with the Water Framework Directive.

Recommendations based on Additional Information

Based on consideration of the licence application, further information and submissions received, I recommend that the Agency grant a waste water discharge licence (WWDL), in accordance with the RL as considered by the Board of the Agency on the 8th September 2009 and subject to the further recommendations included below. Based on the above information, it is clear that the applicant acknowledges that upgrade of the Ringsend WWTP is necessary. Whether the upgrade involves new plant at the WWTP, a long sea outfall or both, the development would be subject to an Environmental Impact Assessment (EIA)/Environmental Impact Statement (EIS) and An Bord Pleanála approval. The reports submitted to date, and summarised briefly above, do not represent an EIA or EIS.

The information submitted by Dublin City Council is of value in providing an indication of the direction likely to be taken by the applicant and also provides an anticipated timeframe for achievement of milestones towards upgrading Ringsend WWTP. The recommended amendment of condition 5.4 below takes account of the assessments completed by the Applicant and the Gantt chart presented by the Applicant as additional information received on the 20th January 2010.

The applicant has not provided a list of storm water overflows (SWOs) for upgrade, however it is acknowledged that there are a very significant number of storm overflows within the agglomeration and there is a procedure and criteria issued by the Department of Environment, Heritage and Local Government in relation to selection of SWOs for upgrading. The recommended amendment (outlined below) of condition 4.12 (4.13 of the RL considered by the Board on the 8th September 2009) requires the applicant to prioritise SWOs for upgrade. The prioritisation of SWOs shall include consideration of the procedure and criteria issued by the Department of Environment, Heritage and Local Government.

The RL does not approve Dublin City Council's proposal to discharge effluent from Ringsend by means of a long-sea outfall. Schedule A.1 includes emission limit values for Total Nitrogen and Total phosphorus (as P), in accordance with the Urban Waste Water Treatment Regulations, on the basis that the effluent is discharged to the Liffey Estuary (designated as 'sensitive'). I do not consider the RL can provide for the proposed long sea outfall or revise the emission limit values for the primary discharge as the proposed development is still subject to completion of an EIA and preparation of an EIS. Dublin City proposes to have an EIS completed and submitted to An Bord Pleanála by October 2010. The EIS shall then be assessed, including consideration of objections, by An Bord Pleanála. In accordance with regulation 22 of the Waste Water Discharge (Authorisation) Regulations 2007 *'The Agency shall have regard to the matters mentioned in an environmental impact statement in respect of a development and in the decision of An Bord Pleanála on an application under section 175(3) of the Act of 2000 for approval of such development only in so far as they relate to the risk of environmental pollution of the receiving waters from the waste water discharge concerned.'*

The predicted completion date for the Ringsend WWTP upgrade (including long sea-outfall) is December 2014. Therefore the applicable emission limit values in the RL are those in relation to the current discharge point to the Liffey Estuary (designated as 'sensitive').

The licensee shall apply for a licence review under Regulation 14(1)(b) of the Waste Water Discharge (Authorisation) Regulations 2007 in relation to any change in the discharge point and as part of the review may seek amendment of the emission limit values. Such a licence review shall be accompanied by an EIS and the decision of An Bord Pleanála and the Agency will have regard to such in so far as they relate to the risk of environmental pollution of the receiving waters from the waste water discharge.

The RL, including recommended amendments, for the Greater Dublin Area Agglomeration does not identify the specific upgrade works to be completed but requires upgrade of the waste water treatment plant and ancillary works in accordance with the Condition 5.4 by 22nd December 2015.

Consideration/Clarification of Items from Board Meeting 8th September 2009

The items raised at the Board meeting of the 8th September 2009 are addressed in the comments below and these should be read as additional to the information included in the Inspectors Report dated the 2nd September 2009.

Discharges to Waters: Board requested further information on the potential relationship between discharges to water and the occurrence of macroalgae:

Increases in the abundance and distribution of opportunistic algae are a common occurrence in areas experiencing increased nutrient loading. As nutrient inputs increase, opportunistic algal can thrive and large accumulations of algae result. Dublin Bay and the Tolka Estuary have historically been affected by such increases in algal biomass. Large strandings of opportunistic algae were a common feature throughout Dublin Bay and the Tolka Estuary during the 1980s and 1990s. While improvements have been seen since the mid 1990s, elevated algal growth is still experienced annually in the Tolka Estuary and more recently accumulations of brown algae have been recurring along the beaches from Seapoint to Sandymount Strand. This indicates that the area is still receiving excessive levels of nutrient loading.

As well as being aesthetically unpleasant and creating unpleasant odours, these accumulations can have other effects on the ecosystem. The algal mats can modify the benthic faunal community structure and diversity and alter the sediment chemistry of affected areas. Additional ambient biological monitoring, as proposed below, of the algal and benthic communities and associated sediment chemistry will allow for a detailed assessment of any effects of discharges into the ecosystem.

Special Protected Areas (SPA) – The Board requested clarification on whether all local SPA's were addressed as part of application:

There are two Special Protected Areas (SPA) within the vicinity of the primary discharge, 'North Bull Island', and 'South Dublin Bay and River Tolka Estuary'. The 'Howth Head Coast' SPA is approximately 7 kilometres northeast of the primary discharge. Within the boundary of the 'South Dublin Bay and River Tolka Estuary' SPA is a structure in the Lower Liffey channel, approximately 200 metres down gradient from the storm water overflow (SW2Dublin).

The SPAs were considered in the Inspector's report dated 2nd September 2009 and were considered in the Appropriate Assessment completed by Dublin City Council in relation to the primary discharge. Dublin City Council have submitted appropriate assessments of the proposed discharges 'Location 3' and Location 4', as identified in Figure 1 above. These appropriate assessments consider the 'North Bull Island', and 'South Dublin Bay and River Tolka Estuary' SPAs.

Clarify the Requirement for Additional Ambient Monitoring:

The Board of the Agency requested that the Environmental Licensing Programme (ELP) clarify the requirement for additional ambient monitoring parameters with the Office of Environmental Assessment (OEA). Following discussion with the OEA, Aquatic Environment Section, of the EPA, additional ambient monitoring is recommended. In particular, this additional ambient monitoring includes biological monitoring (macroalgae, benthic and seaweed diversity) and chemical monitoring

(dangerous substances and specific pollutants). Monitoring locations in the Liffey and Tolka Estuaries and Dublin Bay shall be agreed with the Agency. The additional monitoring requirements shall be included under *Schedule B.4- Ambient Monitoring* of the Recommended Licence (while maintaining *Marine Monitoring* and *Shore Sampling* as specified in the RL considered by the Board on the 8th September 2009).

It is recommended that a definition of 'triennially' as 'once every three years' be included in the glossary of terms.

Amend, *Schedule B.4 Ambient Monitoring* of the RL to include the following:

Biological Monitoring

Locations: Liffey and Tolka Estuaries
Dublin Bay^{Note 1}

Parameter	Monitoring Frequency	Analysis Method/Technique
Intertidal Opportunistic Macroalgal Growth	Annually	Standard Methods ^{Note 2}
Benthic Invertebrates	Triennially	Standard Methods
Intertidal Rocky shore Seaweed Diversity	Triennially	Standard Methods ^{Note 2}

Note 1: Locations of monitoring stations to be agreed with the Agency within three months of the date of grant of licence (based on results of intensive monitoring programme undertaken during 2009).

Note 2: Techniques and sample numbers for biological monitoring should be complementary with the methods currently in use for WFD monitoring.

Chemical Monitoring

Locations: Liffey and Tolka Estuaries
Dublin Bay^{Note 1}

Parameter	Monitoring Frequency	Analysis Method/Technique ^{Note 2}
Dangerous Substances	Triennially	Standard Methods
Specific Pollutants	Triennially	Standard Methods

Note 1: Locations of monitoring stations to fall within boundaries of WFD water bodies, to be agreed with the Agency within three months of the date of grant of licence (based on results of intensive monitoring programme undertaken during 2009).

Note 2: Techniques and sample numbers for chemical monitoring should be complementary to the methods currently in use for WFD monitoring for the substances listed under European Communities Environment Objectives (Surface Water) Regulations 2009.

Amendment of Conditions requested by the Board:

The Board requested that ELP should recommend amended wording for conditions 4.12 (formerly 4.13) and Condition 5.4 of the RL. Based on the discussions at the Board meeting, further consideration of the licence application and further information received on the 20th January 2010, as discussed earlier, the following amended wording is proposed.

Condition 4.12 Storm Water Overflows

- 4.12.1 The licensee shall, within six months of the date of grant of this licence, submit to the Agency a report on the works (upgrade and remediation of storm water overflows) commenced, or due to commence, prior to the submission of the second AER (required under Condition 6.10). The report shall be updated as part of the second AER and thereafter annually as part of the AER.
- 4.12.2 The licensee shall, prior to the date for submission of the second AER (required under Condition 6.10), carry out an investigation for the identification and assessment of storm water overflows. A report on the storm water overflows shall be submitted to the Agency as part of the second AER. The report may be based on studies completed to date including, the 'Greater Dublin Strategic Drainage Study, Final Strategy Report' (April 2005), and shall include a determination of compliance with the criteria for storm water overflows, as set out in the DoEHLG '*Procedures and Criteria in Relation to Storm Water Overflows*', 1995 and any other guidance as may be specified by the Agency. The licensee shall carry out an assessment of storm water overflows identified at least once every three years thereafter and report to the Agency on each occasion as part of the AER.
- 4.12.3 The licensee shall, based on the assessment of storm water overflows completed under condition 4.13.2 and the selection criteria specified by the Department of Environment, Heritage and Local Government prioritise the most significantly non-compliant storm water overflows for improvement works. The prioritisation shall as a minimum consider the frequency of discharge, the duration of discharge, the pollutant parameters within the effluent discharged, and the impact of the discharge on the receiving water (river and estuary). The licensee shall submit to the Agency for agreement a report 'Prioritisation of storm water overflows for improvement works', prior to the date for submission of the second AER and thereafter as part of each subsequent AER. The prioritisation report shall be used by the licensee in the preparation of the programme of infrastructural improvements required under Condition 5.3.

Condition 5.4

- 5.4 The licensee shall, as part of the first AER and annually thereafter, update and amend as appropriate the Gantt chart submitted on the 20th January 2010, as part of the licence application. The licensee shall also provide an annual report on progress made towards achievement of the milestones identified in the Gantt chart submitted, identification of any slippage in achievement of the milestones, mitigation measures to address any slippage in achievement of milestones, technical difficulties encountered and identification of alternative proposals to achieve the Ringsend Waste Water Treatment Plant upgrade by December 2015.

Agency Charges:

Condition 7.1 of the RL specified an annual charge of €9,808. The Board at the meeting on the 8th September 2009 requested that the annual financial charge be clarified with OEE. Having consulted with OEE, Water Enforcement an appropriate annual financial charge for the agglomeration would be €9,780 for 2010 based on the expected enforcement effort required.

Recommended Amendment of Schedules:

As a result of the additional information provided by the Applicant (Regulation 20(1) response outlined above), it is recommended that further amendments be made to the schedules included in the Recommended Licence (RL) which was considered by the Board on the 8th September 2009. In addition a number of schedules should be amended to include appropriate dates from date of grant of licence. The following amendments are recommended:

Amend *Schedule A.1 Primary Waste Water Discharge* to read as follows (changes in **bold**):

A.1 Primary Waste Water Discharge

Primary Discharge Point Code: SW1Dublin

Name of Receiving Waters: Liffey Estuary Lower
(IE_EA_090_0300)

Discharge Location: 321073E, 233814N

Monitoring Location: **320355E, 233396N (Outlet sampling point)**

Parameter	Emission Limit Value
pH	6 - 9
Toxicity	5 TU
Faecal coliform	100,000MPN/100ml ^{Note 1}
	mg/l
CBOD	25
COD	125
Suspended Solids	35
Total Nitrogen	10
Total Phosphorus (as P)	1

Note 1: Limit shall apply from 1 May through to 31 August annually.



Schedule A.3 Discharges to be Discontinued

It is recommended that Row 3, column 4 should be amended to require that discharge point 'S5Fingal' shall cease three months from date of grant of licence.

Amend to read as follows:

A.3 Discharges to be discontinued

Discharge Point Code	Location	Name of Receiving Waters	Discharge shall cease from
S4Fingal	328513E, 236566N	Irish Sea	31 December 2011
S5Fingal	329975E, 239001N	Irish Sea	Three months from date of grant of licence.



Schedule A.4 Storm Water Overflows

Amend Note 1 to read as:

The licensee shall remediate storm water overflows identified under condition 4.12 in accordance with the programme of infrastructural improvements prepared in accordance with Condition 5.3.



Schedule B.2 Monitoring of Secondary Waste Water Discharge

Amend Note 1 to reflect *Schedule A.3 Discharges to be Discontinued*.

Amend to read as:

Note 1: Secondary discharge point S4Fingal shall be discontinued by the 31 December 2011 and S5Fingal shall cease within three months of the date of grant of licence.



Schedule B.4 Ambient Monitoring

Marine Monitoring

Amend Note 2 to read as follows:

Note 2: Estuary (Liffey and Tolka)/Dublin Bay monitoring locations to be agreed with the Agency within three months of the date of grant of licence (based on results of intensive monitoring programme **undertaken during 2009**).



Schedule C.1 Improvement Programme for Primary Discharge

It is recommended that row 2 of Schedule C.1 should be amended to require the upgrade of the waste water treatment plant and ancillary works in accordance with condition 5.5.

Amend to read as follows:

C.1 Improvement Programme for Primary Discharge

Specified Improvement	Completion Date
Upgrade waste water treatment plant and ancillary works in accordance with Condition 5.5.	22 nd December 2015
Upgrade storm water storage tank at WWTP, as necessary	22 nd December 2015
Any other works notified in writing by the Agency	As agreed



Schedule C.3 Improvement Programme for Storm Water Overflows

Amend to read as:

The licensee shall complete projects identified in the Water Services Investment Programme and infrastructural improvements identified in accordance with **Conditions 4.12 and 5.3** of this licence.



Schedule D Annual Environmental Report

Amend to include the following additional reports:

- **Report on Storm Water Overflows (upgrades completed in the 12 months being reported on and upgrades due to be commenced and completed over the next 24 months).**
- **Report on progress towards completion of Ringsend Waste Water Treatment Plant Upgrade (Condition 5.4).**

Consideration of Submissions

Submissions – pre Board Meeting of 8th September 2009

Submission No.1

Mrs Cavendish, received 28th May 2009.

The submission received from Mrs Cavendish was considered in the Inspector's Report, dated the 2nd September 2009. In addition to the consideration provided in the Inspector's Report the matter has been further considered by OEA Aquatic Environment Section of the EPA. OEA considers that the incident reported by Mrs. Cavendish is likely to be the result of a phytoplankton bloom. April/May is the spring bloom for phytoplankton and cell numbers naturally get very high in the water column. As they die off and break down a foam results. These blooms are generally not of any concern unless they occur outside the natural blooming period or contain species that can produce harmful toxins.

Brown macro-algal accumulations, associated with deposits of the seaweed *Ectocarpus* may also be washed ashore when conditions are favourable and then decompose along the high water mark. These deposits may create very unpleasant odours and decomposition can also produce foamy deposits along the high water mark.

Submissions – post Board Meeting of 8th September 2009

Submission No. 2

Eastern Regional Fisheries Board, received on the 22nd September 2009.

The Eastern Regional Fisheries Board identifies that Ringsend WWTP will discharge all of its effluent under normal working conditions to the Liffey and Tolka Estuaries and Dublin Bay. The Tolka constitutes a salmonid system (under significant ecological pressure) while the Liffey is one of the foremost salmonid systems in the region. It is noted by the Fisheries Board that Ringsend is loaded beyond its design load capacity.

The Fisheries Board identifies that the Liffey system supports a regionally significant population of Atlantic salmon. Estuaries serve as the natural linkage for species such as salmon, sea trout, and eels migrating between freshwater and ocean environments. The Report of the Standing Scientific Committee of the National Salmon Commission "Status of Irish Salmon Stocks in 2006", and precautionary catch advice for 2007, states that in applying the Habitats Directive consideration must be given to all the populations of salmon and not just specifically to the 26 SAC designated river populations.

The Fisheries Board acknowledges that the Appropriate Assessment (AA) considers Natura 2000 sites and associated species of interest, and they note that it is essential to consider the issue of fisheries impact. As correctly identified in the AA – the missing (*sic.*) {mixing} zone, where the greatest impact was shown in modelling exercises is a key area for fish species, in particular migratory species. Fish and bird habitats are inextricably linked in these areas.

The Fisheries Board provides an overview of the fisheries ecology in estuaries, they identify the links in the trophic chain and in particular they identify that estuarine fish can generally be divided into a number of groups:

- Estuarine dependant (opportunists) species typically enter estuaries from the sea for a period each year but do not stay permanently.
- Marine stragglers enter estuaries irregularly and are often restricted to the seaward end (usually low in numbers or individuals).
- Riverine species come from the freshwater end of the system and are mainly found in low salinity waters.
- Truly estuarine species (residents) comprise only a small number of species although they may form a high overall biomass. The gobies are most typical of this group as they are found in estuaries around the year.
- Migratory species use the estuary and inshore waters as a route from rivers to the open sea or vice versa. Most of these species are anadromous (breed in freshwater) e.g., the lampreys, the shads and the salmon/sea trout. Eels are catadromous and breed in the sea.

All of these fish groups are likely to utilise the estuarine habitat in the vicinity of Ringsend WWTP and should be considered in any assessment process. Sufficient treatment capacity must be available both within the receiving sewerage system locally and downstream at the relevant WWTP at all times in order that the ecological integrity of the ultimate receiving water is protected.

The Fisheries Board identifies that Part II (5) of the European Communities Environmental Objectives (Surface Waters) Regulations 2009 states that, '*...A public authority shall not, in the performance of its functions, undertake those functions in a manner that knowingly causes or allows deterioration in chemical status or ecological status (or ecological potential as the case may be) of a body of surface water....*'. Design criteria for the Ringsend plant must be in line with the above regulations in achieving 'good status', ecological/chemical, by 2015. The additional objectives of the 'sensitive' area designation under the Urban Waste Water Treatment Directive (Liffey Estuary) and Shellfish Directive, where applicable, should also apply.

Comments:

The Inspector's Report, dated the 2nd September 2009, acknowledges that the Ringsend WWTP is receiving a loading of effluent in excess of its design load capacity. This report also considers the emissions from the primary discharge and the impact of the discharge on the receiving waters and the 'sensitive' water designation under the Urban Waste Water Treatment Regulations. The Recommended Licence (RL) sets emission limit values on the primary discharge in line with the Urban Waste Water Treatment Regulations including emission limit values for Total Phosphorus and Total Nitrogen. The European Communities (Quality of Shellfish Waters) Regulations 2006 and amendments do not designate an area within close proximity of the primary discharge

Dublin City Council have acknowledged that the waste water treatment plant at Ringsend is operating beyond its design load capacity and is not capable of achieving the emission limit values as specified in the Urban Waste Water Treatment

Regulations. Dublin City Council submitted additional information in accordance with Regulation 20(1) of the Waste Water Discharge (Authorisation) Regulations including a Design Review Report, discussed above in this report (Addendum A), which identifies options for upgrading the Ringsend WWTP and construction of a proposal for a long sea outfall. The additional information submitted identifies the long sea outfall as Dublin City Council's preferred option. Dublin City Council have provided a Gantt chart for upgrading the Ringsend WWTP by December 2015. The proposed upgrade of the WWTP is subject to Dublin City Council completing an EIA and preparing an EIS. An EIA/EIS will require assessment of impact of the emission of effluent, at the proposed primary discharge location (long sea outfall).

In addition the RL requires the licensee to investigate and assess the performance of storm water overflows within the agglomeration. The recommendations identified in this report (Addendum A) require the licensee to prioritise improvement works on storm water overflows and to bring them into accordance with the Department of Environment, Heritage and Local Government (DoEHLG) *Procedures and Criteria in Relation to Storm Water Overflows*.

The RL as considered by the Board of the Agency on the 8th September 2009 included ambient monitoring of the water column in the Liffey and Tolka Estuaries, Dublin Bay and shore sampling. This report (Addendum A) recommends additional ambient monitoring, including biological monitoring (macroalgae, benthic and seaweed diversity) and chemical monitoring (dangerous substances and specific pollutants) at locations in the Liffey, Tolka Estuaries and Dublin Bay to be agreed with the Agency (see recommendation above Schedule B.4 Ambient Monitoring).

Submission No. 3

Eurolaw Environmental Consultants (EEC), Mr. Malone, Environmental Development Officer, received on the 2nd March 2010.

EEC state that on the 7th December 2009 they registered a complaint with the European Commission, concerning infringements of several European Directives by Dublin City Council, Carlow County Council and the Environmental Protection Agency (copy of the complaint enclosed with the submission). They identify that on 16th July 2009, the ECJ in Case C-427/07, ruled that Ireland infringed Article 2(1) and Article 4(2) of the EIA Directive 85/337/EEC, as amended by Directive 97/11/EC. They further identify that in July 2008, the ECJ ruled (C-215/06) that the provisions of Irish law, in allowing planning applications for retention permission, were in breach of the EIA Directive. EEC state that until there is an adequate EIS submitted with this application for a waste water discharge licence (WWDL), EEC and the general public are precluded from making an effective submission to the EPA. In addition, in compliance with European Law, the EPA is precluded from making a decision until the applicant has submitted an EIS in accordance with Articles 5 to 10 of the EIA Directive.

The copy of the complaint (letter) to the European Commission, addressed to Mr. Liam Cashman and dated the 7th December 2009 is attached to the submission. The letter of complaint concerns sewage waste generated from the Ringsend WWTP and stored at Thornhill, County Carlow without planning permission or a licence prior to being spread on lands. The letter also states that the Irish authorities have still not

correctly transposed the EIA or Waste Directives into Irish law, and have not ratified the Aarhus Convention, signed over 10 years ago.

The letter to the European Commission provides a background history in relation to the Ringsend WWTP and identifies that a licence application has been made to the EPA. It is stated that the EPA does not have an adequate EIS in order to adjudicate on this WWDL application and the EIS prepared in 1997 is legally flawed and the plant has significantly increased since 1997. Accordingly a new EIS for the intensification is required.

The letter to the European Commission under the heading 'Infringements of the EIA Directive' identifies infringements of the EIA Directive. It is claimed that two ECJ cases (Case C-210/02 and C-215-06) clearly show that the EIA Directive was never correctly transposed into Irish law. It is stated that the Ringsend WWTP has significantly increased since 1997 and now requires an EIS. It is stated that in March 2008 An Bord Pleanála directed Dublin City Council to prepare an EIS in advance of the Council's submission of a planning application to extend the Ringsend plant. It is claimed that Carlow County Council and An Bord Pleanála infringed Article 1 of the EIA Directive in failing to request an EIS for the Thornhill waste project.

The letter to the European Commission under the heading 'Infringements of the Waste Directive' identifies infringements of the Waste Directives. It is stated that Irish authorities infringed the European Waste Directives and Case C-188/08 ruled that Ireland failed to comply with Article 4 and 8 of the Waste Directives. It is claimed that Dublin City Council infringed Article 4 and 8 of the Waste Directive in failing to ensure that waste from the Ringsend WWTP was disposed of without risk to water, air, soil and plants. It is claimed that the storage and disposal of 'Biofert' is operated in a manner that will cause environmental pollution and there is no waste licence for the activity. It is stated that the EPA inspected the facility at Thornhill and claimed that it was completely satisfied with the arrangements.

The letter to the European Commission under the heading 'Infringements of the Sewerage Sludge Directive 86/278/EEC' identifies infringements of the Directive. In relation to the Sewerage Sludge Directive it is claimed that Dublin City Council, Carlow County Council and the EPA infringed Article 5 of the Sewerage Sludge Directive in allowing sewage sludge be disposed on lands where the concentration of one or more heavy metals in the soil exceeded the limit values. As a general principle there should be a clearly defined benefit to agriculture from the spreading of biosolid waste on agricultural land, source control and monitoring of biosolids are essential to food safety.

Comments:

The Agency received a licence application in accordance with the Waste Water (Authorisation) Regulations 2007. Dublin City Council is the lead authority for the application and the other local authorities, which fall within the agglomeration are joint applicants. The 1997 EIS was submitted with the licence application. The Agency is aware that modifications have taken place at the Ringsend Waste Water Treatment Plant. The Agency is, however, not aware that Dublin City Council has been required to prepare an EIS for any of the works completed to date. It is not

within the Agency's statutory remit, under the Waste Water Discharge (Authorisation) Regulations 2007, to require the Applicant to submit an EIS.

It is acknowledged by the Applicant that any future significant upgrade of the Ringsend WWTP would require an EIS and approval from An Bord Pleanála. Dublin City Council have not yet completed an EIS, but have commenced the EIA process, Dublin City Council propose to have an EIS submitted to An Bord Pleanála by October 2010. I recommend that the Agency grant a licence for the Greater Dublin Area Agglomeration which authorises the waste water discharges from the agglomeration, sets emission limit values and includes conditions requiring upgrade of the WWTP and discharges. The recommendation does not approve any specific upgrade of the Ringsend WWTP. However it is acknowledged that the current discharge does not comply with the UWWT Regulations. The RL requires the licensee to progress the upgrade of the Ringsend WWTP and associated emission points by December 2015, in order to meet EU Directives, e.g., UWWT Directive, Water Framework Directive, etc.

Accordingly, the licensee shall apply for a licence review under Regulation 14(1)(b) of the Waste Water Discharge (Authorisation) Regulations 2007 in relation to any change in the discharge point and as part of the review may seek amendment of the emission limit values. Such a licence review shall be accompanied by an EIS and the decision of An Bord Pleanála, as required by Regulation 22 of the Waste Water Discharge (Authorisation) Regulations.

Sludge arising at the Ringsend WWTP is not included within the terms of the Waste Water Discharge (Authorisation) Regulations 2007. Therefore consideration of the licence application does not extend to the management, storage or recovery of sludge. The RL therefore does include conditions in relation to the management, storage or recovery of sludge arising at the facility.

Submission No. 4

Mr Fegan, received 11th March 2010.

Mr Fegan's submission includes 16 points of observation in relation to the licence application and the additional information supplied by the applicant under Regulation 20(1) of the Waste Water Discharge (Authorisation) Regulations 2007. The submission notes that a complaint about the operation of the Ringsend WWTP has been brought to the European Commission. The following is a summary of the points raised in the submission:

- The proposals put forward by Dublin City Council will require an EIS;
- The urban waste water discharge licence cannot be granted until the EIS procedure has been completed satisfactory and approved;
- Dublin City Council has not included a description of the waste created by the Ringsend WWTP nor has it dealt with how this waste is to be disposed of;
- Dublin City Council's Waste Management Plan does not contain a sludge management plan, therefore the Waste Management Plan is defective;
- At present the waste sludge being produced is stored in an unauthorised storage facility;

- The lands on which the sludge has been spread has been subject of comment in the EPA bi-annual Urban Waste Water Discharges reports. Sludge from Ringsend has been spread in some 850 cases where the maximum concentration of heavy metals in soils exceeded the permitted levels;
- The Ringsend WWTP and associated waste water discharge should be subject to an IPPC licence;
- Dublin City Council's proposal is that no additional treatment takes place at Ringsend and that the waste water is discharged at a non compliance standard;
- No reference has been made to endocrine disrupting chemicals;
- The effects of endocrine disrupting chemicals over long period of time has not been considered;
- The catchment of the agglomeration has been extended without the necessary additional capacity being installed;
- There is no explanation as to why the p.e. dropped in 2002 and 2003 and increased in 2004 (2.34 to 2.187 respectively);
- No information is provided in relation to tanker waste transported to the site;
- The EPA's processing of the application must take into account the decision and ruling of the ECJ case C-188/08;
- All waste water treatment facilities are now obliged to comply with BAT; and
- All waste water treatment facilities, and all effluent and sludge disposal procedures, are required to act on the precautionary principle.

Comments:

The points made in the submission can be addressed under the following headings: Requirements for an EIA/EIS; Management of Waste Generated by the Facility; Appropriate Licensing Regime for the Facility; The Agglomeration and Treatment of Discharges; and ECJ Case.

Requirement for an EIA/EIS

The information submitted by the applicant in January 2010, under Regulation 20(1), acknowledges that an EIS is required for further upgrade of the WWTP. The additional information submitted by the applicant under Regulation 20(1) of the Waste Water Discharge (Authorisation) Regulations 2007 outlines an assessment of WWTP upgrade options and identifies the applicants preferred option, subject to completion of an EIA. It is considered appropriate to authorise the discharges associated with the agglomeration, while acknowledging that the final upgrade option is subject to an EIA and EIS. Regulation 22 of the Waste Water Discharge (Authorisation) Regulations 2007 require the Agency to *'have regard to the matters mentioned in an environmental impact statement in respect of a development and in the decision of An Bord Pleanála on an application under section 175(3) of the Act of 2000 for approval of such development only in so far as they relate to the risk of environmental pollution of the receiving waters from the waste water discharge concerned.'* Dublin City Council indicates that they will have an EIS submitted to An Bord Pleanála by October 2010.

Management of Waste Generated by the Facility

The scope of the waste water discharge licensing process is limited, by regulations, to the discharges to water from the agglomeration. The licensing process is not an integrated one as is the case, for example, in relation to the Integrated Pollution

Prevention and Control (IPPC) licensing process under the Environmental Protection Agency Acts. Therefore issues in relation to management, storage, recovery or disposal of sludge are not within the scope of the Agency's assessment of this licence application.

The Agency has powers under Section 63 of the EPA Acts to carry out an assessment of the performance by a Local Authority and thereafter may issue such advice and recommendations to the authority, provide support or guidance, or issue a direction to the authority.

Appropriate Licensing Regime for the Facility

The WWTP and associated discharges do not fall under any of the activities in the First Schedule of the EPA Acts 1992 to 2007 and therefore it is not subject to an Integrated Pollution Prevention and Control (IPPC) Licence.

The Agglomeration and Treatment of Discharges

The information submitted in January 2010 includes a proposal to relocate the primary discharge point by means of a long sea outfall. The proposal is identified by Dublin City Council as their preferred option based on an initial assessment of options, but is subject to an EIA and EIS. The current primary discharge is into the Liffey Estuary, which is designated as 'sensitive' under the Urban Waste Water Treatment Regulations 2001 and amendments. The proposed long sea outfall would be to waters which are not designated as 'sensitive', therefore these regulations would not specifically require Total Phosphorus and/or Total Nitrogen to be limited, as per the Second Schedule Part 2. Compliance with the European Communities Environmental Objectives (Surface Waters) Regulations 2009 would be required at the proposed discharge point.

While the licence application does not specifically assess the impact of endocrine disrupters, which may be present in the effluent discharge, the Agency has funded research into the presence and concentration of endocrine disrupters in the Irish aquatic environment. In particular the Agency published a report in 2005 entitled Endocrine Disrupters in the Irish Aquatic Environment. Emissions from the Ringsend WWTP were considered as part of the report. The report concluded, amongst other things, that:

- Irish WWTP effluents are estrogenic, although levels compare favourably with other European countries and the USA;
- Irish rivers and lakes do not appear to be at general risk from significant concentrations of environmental estrogens; and
- In general, wild fish populations do not appear to be at risk from estrogenic chemicals.

Changes in p.e. received at the WWTP are likely to be impacted by a wide range of factors including economic activity, tourism etc. As part of the assessment of the licence application consideration has been given to the discharge and impacts of the discharge on the receiving water. Such impacts have been considered in the Inspector's report and further expanded on in this report (Addendum A). The RL considered by the Board on the 8th September 2009 and further recommendations included in this report (Addendum A) reflect the consideration of all the information available, including the information presented by the applicant, ambient monitoring

by the applicant and the Agency and the submissions received in relation to the licence application.

The licences issued in accordance with the Waste Water Discharge (Authorisation) Regulations 2007 relate to the discharges to water from the agglomerations, the RL specifies emission limit values which must be achieved rather than the infrastructure, including type of waste water treatment plant that must be installed. It is considered that the precautionary principle has been adopted by the European Commission in developing directives, including the Water Framework Directive.

ECJ Case

ECJ case number C-188/08 relates to an action brought by the European Commission against Ireland on the 6th May 2008 which concerns a failure to implement the Waste Framework Directive in relation to domestic waste waters disposed of through septic tanks and other individual treatment systems. The court judgement, 29 October 2009, declared that, by failing to adopt, save in County Cavan, all the laws, regulations and administrative provisions necessary to comply with Articles 4 and 8 of Council Directive 75/442/EEC of 15 July 1975 on waste, as amended by Council Directive 91/156/EEC of 18 March 1991, as regards domestic waste waters disposed of in the countryside through septic tanks and other individual waste water treatment systems, Ireland has failed to fulfill its obligations under that directive. The declaration of the court is considered not to have a direct effect on the processing of this licence application.

Signed:



Patrick Byrne
Senior Inspector
Environmental Licensing Programme

Summary of New or Amended Conditions/Schedules:

This report (Addendum A) recommends a number of new or amended conditions/schedules. In addition the Board at the meeting of the 8th September 2009 recommended amendment of a number of conditions/schedules. The table below summarises the new, amended and deleted conditions/schedules arising from the Board meetings on the 8th September 2009 and the recommendations of this report (Addendum A).

Table 1 List of New, Amended or Deleted Conditions

Condition or Schedule number	Amend/Delete a condition/schedule in the RL	New condition	Description
Introduction	✓		Amend 6 th paragraph of the Introduction. As per Board meeting 8 th September 2009 and to reflect additional information received from the Applicant.
Introduction	✓		Amend first sentence of the final paragraph. As per Board meeting 8 th September 2009.
Glossary of Terms		✓	Include definition of 'triennially'. As recommended in this report.
1.2.3		✓	Insert new condition as Condition 1.2.3. As per Board meeting 8 th September 2009.
4.11	✓		Delete Condition 4.11 (Toxicity) and amend numbering thereafter. As per Board meeting 8 th September 2009.
4.11.1 (formerly 4.12.1)	✓		4.11 Dangerous Substances Amend first sentence of Condition 4.11.1, 'within six months of the date of grant of this licence'. As per Board meeting 8 th September 2009.
4.11.2 (formerly 4.12.2)	✓		Amend first sentence of Condition 4.11.2, '...investigate the sources, <i>if any</i> , of dangerous substances..' As per Board meeting 8 th September 2009.
4.12 Storm Water Overflows 4.12 (formerly 4.13)	✓		Amend Condition 4.12. As recommended in this report and as per the Board meeting 8 th September 2009.
4.17	✓		Delete Condition 4.17 Habitats. As per Board meeting 8 th September 2009.
5.4		✓	Insert new Condition 5.4. As recommended in this report having consideration of the Board meeting 8 th September 2009.
7.1	✓		Amend the annual contribution. As recommended in this report having clarified the annual contribution with OEE.

Condition or Schedule number	Amend/Delete a condition/schedule in the RL	New condition	Description
Schedule A.1	✓		Amend Schedule A.1 Primary Waste Water Discharge. As recommended in this report.
Schedule A.3	✓		Amend Schedule A.3 Discharges to be Discontinued As recommended in this report.
Schedule A.4	✓		Amend Note 1 of Schedule A.4 Storm Water Overflows. As recommended in this report.
Schedule B.1	✓		Insert Dissolved Inorganic Nitrogen as an additional parameter. As per Board meeting 8 th September 2009.
Schedule B.2	✓		Amend Note 1 of Schedule B.2 Monitoring of Secondary Waste Water Discharge. As recommended in this report.
Schedule B.4	✓		Insert additional ambient monitoring (biological and chemical monitoring) and amend Note 1 in relation to Marine Monitoring, Biological Monitoring and Chemical Monitoring. As recommended in this report.
Schedule C.1	✓		Amend Row 2 of the Schedule C.1 Improvement Programme for Primary Discharge. As recommended in this report.
Schedule C.3	✓		Amend Schedule C.3 Improvement Programme for Storm Water Overflows. As recommended in this report.
Schedule D	✓		Insert additional reports required under Conditions 4.12 and 5.4. As recommended in this report.