

LICENCE REG. NO P0010-03 (471)  
HAS BEING REVISED  
Please note that licence Reg No  
P0010-03 (471) was reviewed and  
replaced by P0010-04the revised  
licence Reg No P0010-04



Headquarters,  
Johnstown Castle Estate,  
Wexford, Ireland

## INTEGRATED POLLUTION CONTROL REVISED LICENCE

|                                     |                                 |
|-------------------------------------|---------------------------------|
| <b>Licence Register<br/>Number:</b> | 471                             |
| <b>Licensee:</b>                    | Warner-Lambert Export Limited.  |
| <b>Location of Activity:</b>        | Loughbeg, Ringaskiddy, Co. Cork |

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## Glossary of Terms

|                  |  |
|------------------|--|
| The Agency       | Environmental Protection Agency.   |
| The Licensee     | Warner-Lambert Export Limited, Loughbeg, Ringaskiddy, Co. Cork   |
| AER              | Annual Environmental Report.   |
| Annually         | All or part of a period of twelve consecutive months.  |
| BATNEEC          | Best Available Technology Not Entailing Excessive Cost.  |
| Bi-annually      | All or part of a period of six consecutive months.   |
| BOD              | 5 day Biochemical Oxygen Demand.   |
| COD              | Chemical Oxygen Demand.  |
| Daily            | During all days of plant operation, and in the case of emissions, when emissions are taking place; with no more than 1 measurement on any one day. |
| Day              | Any 24 hr. period.   |
| Daytime          | 0800 hrs to 2200 hrs.  |
| dB(A)            | Decibels (A weighted).   |
| DO               | Dissolved Oxygen.  |
| EMP              | Environmental Management Programme.  |
| EWC              | European Waste Catalogue (94/3/EEC, see also Agency Guidance Note on the EWC)  |
| Fortnightly      | At least 20 measurements in a calendar year with no more than one measurement in any one week.   |
| GC/MS            | Gas Chromatography/ Mass Spectroscopy  |
| IPC              | Integrated Pollution Control.  |
| K                | Kelvin.  |
| kPa              | kilo Pascals.  |
| LEL              | Lower Explosive Limit  |
| Leq              | Equivalent continuous sound level.   |
| Lighting-up time | 30 minutes after sun set.  |

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|                               |  |
|-------------------------------|--|
| List I                        | As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.  |
| List II                       | As listed in the EC Directives 76/464/EEC and 80/68/EEC and amendments.  |
| Local Authority               | Cork County Council.   |
| Monthly                       | At least 12 times per year at approximately monthly intervals.   |
| Night-time                    | 2200 hrs to 0800 hrs.  |
| Noise sensitive location      | Any dwelling house, hotel or hostel, health building, educational establishment, place of worship or entertainment, or any other facility or area of high amenity which for its proper enjoyment requires the absence of noise at nuisance levels.     |
| Previous request for revision | Lodged with the Agency on July 21, 1997 (Reg. No. 299).  |
| PER                           | Pollution Emission Register.   |
| Quarterly                     | All or part of a period of three consecutive months beginning on the first day of January, April, July or October.   |
| Revised licence application   | Information received by the Agency on October 7, 1997 in relation to a request from applicant for a revised licence (Reg. No. 299).  |
| Sanitary Authority            | Cork County Council.   |
| Standard Methods              | As detailed in "Standard Methods for the Examination of Water and Wastewater", (prepared and published jointly by A.P.H.A., A.W.W.A & W.E.F) 19th Ed. 1995, American Public Health Association, 1015 Fifteenth Street, N.W., Washington DC 20005, USA. |
| TA Luft                       | Technical Instructions on Air Quality Control - TA Luft in accordance with art. 48 of the Federal Immission Control Law (BImSchG) dated 15 March 1974 (BGBl. I p.721). Federal Ministry for Environment, Bonn 1986.                                    |
| Waste disposal operation      | Means any of the operations included in the Third Schedule to the Waste Management Act 1996.   |
| Waste recovery operation      | Means any of the operations included in the Fourth Schedule to the Waste Management Act 1996.  |
| Weekly                        | During all weeks of plant operation, and in the case of emissions, when emissions are taking place; with no more than one measurement in any one week.   |

## ***Reasons for the Decision***

The Agency is satisfied, on the basis of the information available that, subject to compliance with the conditions of this licence, any emissions from the activity will comply with and not contravene any of the requirements of Section 83(3) of the Environmental Protection Agency Act, 1992.

In reaching this decision the Agency has considered the original application (Reg No: 10 and subsequent review Reg No: 299) and supporting documentation received from the licensee as part of this review (Reg No: 471), objections received and the report of its inspectors.

## ***Activities Licensed***

In pursuance of the powers conferred on it by the Environmental Protection Agency Act, 1992, the Agency hereby grants the revised licence to:

Warner-Lambert Export Limited, Loughbeg, Ringaskiddy, Co. Cork

under Section 88(2) of the said Act to carry on the following activity:

the manufacture of pharmaceutical products and their intermediates

at Loughbeg, Ringaskiddy, Co. Cork subject to the following Conditions (13 No.), with the reasons therefor and associated schedules attached thereto.

## ***Conditions***

### **Condition 1 Scope**

- 1.1 The activity shall be controlled, operated, and maintained and emissions shall take place as set out in this Integrated Pollution Control (IPC) licence. All programmes required to be carried out under the terms of this licence and the licence which was the subject of the review, become part of this licence.
- 1.2 No alteration to, or reconstruction in respect of, the activity or any part thereof which would, or is likely to, result in a material change or increase in:
  - 1.2.1 The nature or quantity of any emission,
  - 1.2.2 The abatement/treatment or recovery systems,
  - 1.2.3 The range of processes to be carried out,
  - 1.2.4 The fuels, raw materials, intermediates, products or wastes generated,or any changes in:
  - 1.2.5 The site management and control with adverse environmental significance

shall be carried out or commenced without prior notice to, and without the prior written agreement of, the Agency.

- 1.3 This licence is for the purposes of IPC licensing only and nothing in this licence shall be construed as negating the licensee's statutory obligations or requirements under any other enactments or regulations.
- 1.4 Any reference in this licence to 'site' shall mean the plan area shown in black and labelled "Site Plan - Location of Activities & Buildings" Drawing No P01/R5-01/A1 in this IPC revised licence application.
- 1.5 This revised licence is being granted in substitution for the IPC licence granted to the licensee on May 13, 1998 and bearing Register No.: 299. The previous IPC licence (Reg. No. 299) is superseded by this revised licence.

*Reason: To clarify the scope of this licence.*

## **Condition 2 Management of the Activity**

- 2.1 The licensee shall maintain an Environmental Management System (EMS) which shall fulfil the requirements of this licence. The EMS shall assess all operations and review all practicable options for the use of cleaner technology, cleaner production and the reduction and minimisation of waste, and shall include as a minimum those elements specified in the Conditions 2.2 to 2.9 below:
- 2.2 A schedule of Environmental Objectives and Targets
  - 2.2.1 The licensee shall prepare a schedule of Environmental Objectives and Targets. The schedule shall include time frames for the achievement of set targets. The schedule shall address a five year period as a minimum. The schedule shall be prepared to the satisfaction of the Agency and shall be reviewed annually and amendments thereto notified to the Agency for agreement as part of the Annual Environmental Report (AER) (See also Condition 2.9).
- 2.3 Environmental Management Programme (EMP)
  - 2.3.1 The licensee shall maintain an EMP, including a time schedule, for achieving objectives and targets. The EMP shall form part of the AER and shall be agreed with the Agency prior to implementation. It shall include:
    - (i) designation of responsibility for targets;
    - (ii) the means by which they may be achieved;
    - (iii) the time within which they may be achieved.
  - 2.3.2 A report on the programme, including the success in meeting agreed targets, shall be prepared and submitted to the Agency as part of the AER. Such reports shall be retained on-site for a period of not less than seven years and shall be available for inspection by authorised persons of the Agency.
- 2.4 Pollution Emission Register (PER)
  - 2.4.1 The substances to be included in the PER shall be agreed with the Agency each year by reference to the list specified in the AER guidance note. The PER

shall be prepared in accordance with any relevant guidelines issued by the Agency and shall be submitted as part of the AER.

2.4.2 The licensee shall as part of the AER, agree with the Agency the list of substances to be included in the PER, and the methodology to be used in their determination.

## 2.5 Documentation

2.5.1 The licensee shall maintain an environmental management documentation system which shall be to the satisfaction of the Agency.

2.5.2 The licensee shall issue a copy of this licence to all relevant personnel whose duties relate to any condition of this licence.

## 2.6 Corrective Action

2.6.1 The licensee shall maintain procedures to ensure that corrective action is taken should the specified requirements of this licence not be fulfilled. The responsibility and authority for initiating further investigation and corrective action in the event of a reported non-conformity with this licence shall be defined.

## 2.7 Awareness and Training

2.7.1 The licensee shall maintain procedures for identifying training needs, and for providing appropriate training, for all personnel whose work can have a significant effect upon the environment. Appropriate records of training shall be maintained.

2.7.2 Personnel performing specifically assigned tasks shall be qualified on the basis of appropriate education, training and/or experience, as required.

## 2.8 Responsibilities

2.8.1 The licensee shall ensure that a person in charge, as defined under the terms of the Environmental Protection Agency Act, 1992 shall be available on-site at all times. The person in charge shall also be available to meet with authorised persons of the Agency at all reasonable times.

## 2.9 Communications

2.9.1 The licensee shall maintain a programme, to the satisfaction of the Agency, to ensure that members of the public can obtain information concerning the environmental performance of the licensee at all reasonable times.

2.9.2 The licensee shall submit to the Agency each calendar year an AER which shall be to the satisfaction of the Agency. This report shall include as a minimum the information specified in *Schedule 6(i) Recording & Reporting to the Agency* and shall be prepared in accordance with any relevant guidelines issued by the Agency.

*Reason: To make provision for management of the activity on a planned basis having regard to the desirability of ongoing assessment, recording and reporting of matters affecting the environment.*

## Condition 3 Interpretation

3.1 Emission limit values for emissions to atmosphere in this licence shall be interpreted in the following way:-

3.1.1 Continuous Monitoring:

- (i) No 24 hour mean value shall exceed the emission limit value.
- (ii) 97% of all 30 minute mean values taken continuously over an annual period shall not exceed 1.2 times the emission limit value.
- (iii) No 30 minute mean value shall exceed twice the emission limit value.

3.1.2 For Non-Continuous Monitoring:

- (i) For any parameter where, due to sampling/analytical limitations, a 30 minute sample is inappropriate, a suitable sampling period should be employed and the value obtained therein shall not exceed the emission limit value.
- (ii) For flow, no hourly or daily mean value, calculated on the basis of appropriate spot readings, shall exceed the relevant limit value.
- (iii) For all other parameters, no 30 minute mean value shall exceed the emission limit value.

3.2 The concentration limits for emissions to atmosphere specified in this licence shall be based on gas volumes under standard conditions of :-

3.2.1 In the case of non-combustion gases:

- (i) Temperature 273K, Pressure 101.3 kPa (no correction for oxygen or water content).

3.2.2 In the case of combustion gases:

- (i) Temperature 273K, Pressure 101.3 kPa, dry gas; 3% oxygen for liquid and gas fuels; 6% oxygen for solid fuels.

3.2.3 In the case of combustion gases from the thermal oxidisers:

- (i) Temperature 273K, Pressure 101.3 kPa, dry gas; 3% oxygen.

3.3 Emission limit values for emissions to sewer in this licence shall be interpreted in the following way:-

3.3.1 Continuous monitoring:

- (i) No pH value shall deviate from the specified range
- (ii) No flow value shall exceed the specified limit.

3.3.2 Non-Continuous Monitoring:

- (i) No pH value shall deviate from the specified range.



- (ii) No temperature value shall exceed the limit value.
- (iii) For parameters other than pH, temperature and flow, eight out of ten consecutive results, calculated as daily mean concentration or mass emission values on the basis of flow proportional composite sampling, shall not exceed the emission limit value. No individual result similarly calculated shall exceed 1.2 times the emission limit value.
- (iv) For parameters other than pH, temperature and flow, no grab sample value shall exceed 1.2 times the emission limit value.

### 3.4 Noise

- 3.4.1 Noise from the activity shall not give rise to sound pressure levels (Leq, 15 minutes) measured at the specified noise sensitive locations which exceed the limit value(s) by more than 2 dB(A).

*Reason : To clarify the interpretation of emission limit values fixed under the licence.*

## Condition 4 Notification

- 4.1 The licensee shall notify the Agency by both telephone and facsimile, if available, to the Agency's Headquarters in Wexford, or to such other Agency office as may be specified by the Agency, as soon as practicable after the occurrence of any of the following:
  - 4.1.1 Any release to atmosphere from any potential emission point.
  - 4.1.2 Any emission which does not comply with the requirements of this licence.
  - 4.1.3 Any malfunction or breakdown of control equipment or monitoring equipment set out in;  
*Schedule 1(ii) Emissions to Atmosphere: Abatement/Treatment Control, and Schedule 2(ii) Effluent Treatment Control* which is likely to lead to loss of control of the abatement system.
  - 4.1.4 Any incident with the potential for environmental contamination of surface water or groundwater, or posing an environmental threat to air or land, or to a sanitary authority sewer, to personnel working in proximity to a sewer, or requiring an emergency response by the Local Authority.

The licensee shall include as part of the notification, date and time of the incident, details of the occurrence, and the steps taken to minimise the emissions and avoid recurrence.

- 4.2 The licensee shall make a record of any incident as set out in Condition 4.1 above. The notification given to the Agency shall include details of the circumstances giving rise to the incident and all actions taken to minimise the effect on the environment and minimise wastes generated.
- 4.3 A summary report of reported incidents shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 4.4 In the event of any incident, as set out in Condition 4.1.2 above which relates to discharges to sewer, having taken place, the licensee shall notify the Sanitary Authority as soon as practicable, after such an incident.

- 4.5 In the case of any incident as set out in Condition 4.1.2 above which relates to discharges to water, the licensee shall notify the Southern Regional Fisheries Board and the Department of the Marine as soon as practicable after such an incident.
- 4.6 In the event of any incident, as set out in Conditions 4.1.2 and 4.1.4 having taken place, the licensee shall notify the Local Authority as soon as practicable, after such an incident.

*Reason : To provide for the notification of incidents and update information on the activity and to provide for the requirements of the sanitary authority in accordance with Section 97 of the EPA Act, 1992.*

## Condition 5 Emissions to Atmosphere

- 5.1 No specified emission to the atmosphere shall exceed the emission limit value set out in *Schedule 1(i) Emissions to Atmosphere*, subject to Condition 3 of this licence. There shall be no other emission to the atmosphere of environmental significance.
- 5.2 Test programme:
- 5.2.1 The licensee shall prepare, to the satisfaction of the Agency, a test programme for the new thermatrix systems, and other abatement equipment installed to treat emissions from the proposed Chemical Building 2 and Chemical Building 3. This programme shall be submitted to the Agency, prior to implementation.
- 5.2.2 This programme, following agreement with the Agency, shall be completed within three months of the commencement of operation of the abatement equipment.
- 5.2.3 The test programme shall include as a minimum, the following:
- 5.2.3.1 Establish all criteria for operation, control and management of the abatement equipment to ensure compliance with the emission limit values specified in this licence.
- 5.2.3.2 Assess the performance of any monitors on the abatement system and establish a maintenance and calibration programme for each monitor.
- 5.2.4 A report on the test programme shall be submitted to the Agency within one month of completion.
- 5.3 All equipment, including backup equipment, specified in *Schedule 1(ii) Emissions to Atmosphere: Abatement/Treatment Control* of this licence shall be provided on-site. All treatment/abatement, control and monitoring equipment shall be calibrated and maintained when in use, in accordance with the information submitted in Table 12(ii) of the IPC revised licence application or as otherwise approved by the Agency under the EMP. The criteria for the operation of the abatement equipment as determined by the test programme, shall be incorporated into the standard operating procedures as approved by the Agency in *Schedule 1(ii) Emissions to Atmosphere: Abatement/Treatment Control*.
- 5.4 Monitoring and analyses of each emission shall be carried out as specified in *Schedule 1(iii) Monitoring of Emissions to Atmosphere* of this licence. Monitoring of emissions from 'Chemical Building 2 and Chemical Building 3' shall not be required until emissions from that building commence. A report on the results of this monitoring shall be submitted to the Agency quarterly.

- 5.5 A summary report of emissions to atmosphere shall be submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 5.6 Boilers shall be operated so as to give a smoke colour less than or equal to shade number 1 on the Ringelmann chart except during periods of start up. Such start up periods shall not exceed 30 minutes in any 24 hour period.
- 5.7 The licensee shall ensure that all operations on-site shall be carried out in a manner such that air emissions and/or odours do not result in significant impairment of, or significant interference with amenities or the environment beyond the site boundary.
- 5.8 The licensee shall submit to the Agency, within six months from the date of grant of this licence, a waste strategy plan which shall be to the satisfaction of the Agency. This plan shall address proposals for the minimisation of solvent emissions from the activity and for off-site disposal.
- 5.9 The licensee shall ensure that only vapour emissions from process operations that do not use chlorinated solvents shall be vented to Adtec thermal oxidisers.

*Reason: To provide for the protection of the environment by way of control, limitation, treatment and monitoring of emissions.*

## Condition 6 Emissions to Sewer

- 6.1 No specified emission to sewer shall exceed the emission limit values set out in *Schedule 2(i) Emissions to Sewer*, subject to Condition 3 of this licence. There shall be no other emissions to sewer of environmental significance.
- 6.2 The equipment, including backup equipment, specified in *Schedule 2(ii) Effluent Treatment Control* of this licence, shall be provided on-site. All treatment/abatement, control and monitoring equipment shall be calibrated and maintained at all times when in use, in accordance with the information submitted in Table 14A(iii) of the IPC revised licence application or as otherwise approved by the Agency under the EMP.
- 6.3 Monitoring and analyses of each emission shall be carried out as specified in *Schedule 2(iii) Monitoring of Emissions to Sewer* of this licence. A report on the results of this monitoring shall be submitted to the Agency quarterly.
- 6.4 A summary report of emissions to sewer shall be submitted to the Sanitary Authority annually and submitted to the Agency as part of the AER. The information contained in this report shall be prepared in accordance with any relevant guidelines issued by the Agency.
- 6.5 The acute toxicity of the undiluted final effluent to at least four aquatic species from different trophic levels shall be determined by standardised and internationally accepted procedures and carried out by a competent laboratory. The name of the laboratory and the scope of testing to be undertaken shall be submitted, in writing, to the Agency, within 3 months of the date of grant of this licence. Once the testing laboratory and the scope of testing have been agreed by the Agency, the Agency shall decide when this testing is to be carried out and copies of the complete reports shall be submitted by the licensee to the Agency within six weeks of completion of the testing.
- 6.6 Having identified the most sensitive species outlined in Condition 6.5, subsequent compliance toxicity monitoring on the two most sensitive species shall be carried out by the laboratory identified in Condition 6.5 as per *Schedule 2(iii) Monitoring of Emissions*

to Sewer. The Agency shall decide when this testing is to be carried out and copies of complete reports shall be submitted by the licensee to the Agency within six weeks of completion of the testing.

- 6.7 The licensee shall at no time discharge or permit to be discharged into the sewer any liquid matter or thing which is or may be liable to set or congeal at average sewer temperature or is capable of giving off any inflammable or explosive gas or any acid, alkali or other substance in sufficient concentration to cause corrosion to sewer pipes, penstock and sewer fittings or the general integrity of the sewer.
- 6.8 No substance shall be present in such concentrations as would constitute a danger to sewer maintenance personnel working in the sewerage system or as would be damaging to the fabric of the sewer or as would interfere with the functioning of a downstream biological treatment works.
- 6.9 No substance shall be discharged to the sewer in a manner, or at a concentration which, following initial dilution, causes tainting of fish or shell fish.

*Reason: By way of control, limitation, treatment and monitoring of emissions to provide for the protection of the environment and to provide for the requirements of the sanitary authority in accordance with Section 97 of the EPA Act, 1992.*

## Condition 7 Waste Management

- 7.1 Disposal or recovery of waste shall take place only as specified in *Schedule 3(i) Hazardous Wastes for Disposal/Recovery*, and *Schedule 3(ii) Other Wastes for Disposal/Recovery* of this licence and in accordance with the appropriate National and European legislation and protocols. No other waste shall be disposed of/recovered either on-site or off-site without prior notice to, and prior written agreement of, the Agency.
- 7.2 Waste sent off-site for recovery or disposal shall only be conveyed to a waste contractor, as agreed by the Agency, and only transported from the site of the activity to the site of recovery/disposal in a manner which will not adversely affect the environment.
- 7.3 Waste for disposal/recovery off-site shall be analysed in accordance with *Schedule 3(iii) Waste Analysis* of this licence.
- 7.4 A full record, which shall be open to inspection by authorised persons of the Agency at all times, shall be kept by the licensee on matters relating to the waste management operations and practices at this site. This record shall as a minimum contain details of the following:
- 7.4.1 The names of the agent and transporter of the waste.
- 7.4.2 The name of the persons responsible for the ultimate disposal/recovery of the waste.
- 7.4.3 The ultimate destination of the waste.
- 7.4.4 Written confirmation of the acceptance and disposal/recovery of any hazardous waste consignments sent off-site.
- 7.4.5 The results of any analyses required under *Schedule 3(iii) Waste Analysis*.

- 7.4.6 The tonnages and EWC Code for the waste materials listed in *Schedule 3(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 3(ii) Other Wastes for Disposal/Recovery*, sent off-site for disposal/recovery.
- 7.4.7 Details of any rejected consignments.
- 7.4.8 The tonnages and EWC Code for the waste materials listed *Schedule 3(i) Hazardous Wastes for Disposal/Recovery* and *Schedule 3(ii) Other Wastes for Disposal/Recovery*, recovered on-site.

A copy of this Waste Management record shall be submitted to the Agency as part of the AER for the site.

**Reason:** To provide for the disposal/recovery of waste and the protection of the environment.

## Condition 8 Noise

- 8.1 Activities on-site shall not give rise to noise levels off-site, at noise sensitive locations, as specified in *Schedule 4(i) Noise* which exceed the following sound pressure limits (Leq, 15 minutes) subject to Condition 3 of this licence:
- 8.1.1 Daytime: 55 dB(A)
- 8.1.2 Night-time: 45 dB(A)
- 48 dB(A) for noise sensitive location reference D only (until June 1 2001).
- 8.2 There shall be no clearly audible tonal component or impulsive component in the noise emission from the activity at any noise sensitive location.
- 8.3 The licensee shall carry out a noise survey of the site operations annually. The licensee shall consult with the Agency on the timing, nature and extent of the survey and shall develop a survey programme to the satisfaction of the Agency. The survey programme shall be submitted to the Agency in writing at least one month before the survey is to be carried out. A record of the survey results shall be available for inspection by any authorised persons of the Agency, at all reasonable times and a summary report of this record shall be included as part of the AER.

**Reason:** To provide for the protection of the environment by control of noise.

## Condition 9 Non-Process Water

- 9.1 Surface water
- 9.1.1 The licensee shall monitor surface water discharges in accordance with *Schedule 5 (i) Surface Water Discharge Monitoring* of this licence and shall submit a report on the results to the Agency quarterly. In addition a summary of the results shall be included in the AER.
- 9.1.2 The licensee shall operate a continuous TOC monitor on surface water discharge points SE 2, SW 3 and SW 5.
- 9.1.3 A visual examination of the surface water discharges shall be carried out daily and shall be logged.

9.1.4 The licensee shall determine the normal levels of TOC for uncontaminated surface water. In addition, the licensee shall, within six months of commencement of surface water discharges, submit proposals to the Agency for the setting of warning and action levels, and establish a response programme when such approved action levels are reached.

9.1.5 In the event that any analyses or observations made on the quality or appearance of surface water runoff should indicate that contamination has taken place, the licensee shall

9.1.5.1 carry out an immediate investigation to identify and isolate the source of the contamination,

9.1.5.2 put in place measures to prevent further contamination and to minimise the effects of any contamination on the environment,

and notify the Agency as soon as is practicable.

## 9.2 Groundwater

9.2.1 The licensee shall maintain groundwater monitoring and extraction wells until such time as approved by the Agency, at the following locations: MW-2, MW-5, EW-2 and EW-4 as outlined in the IPC revised licence application (received November 12, 1998) (Figure 1, Attachment 15.C.4 ).

9.2.2 All groundwater monitoring points shall be included in the sites maintenance programme.

9.2.3 Groundwater monitoring and extraction points MW-2, MW-5, EW-2 and EW-4 shall be sampled and analysed in accordance with *Schedule 5(ii) Groundwater Monitoring*. of this licence. A report of such results shall be submitted annually as part of the AER.

9.2.4 The groundwater from the extraction wells shall be pumped to the wastewater treatment system until such time as approved by the Agency.

9.2.5 The daily volume of groundwater discharged to the wastewater treatment system shall be recorded.

## 9.3 Facilities for the Protection of Groundwater and Surface Water

9.3.1 All tank and drum storage areas shall be rendered impervious to the materials stored therein. In addition, tank and drum storage areas shall, as a minimum be bunded, either locally or remotely, to a volume not less than the greater of the following;

(i) 110% of the capacity of the largest tank or drum within the bunded area

(ii) 25% of the total volume of substance which could be stored within the bunded area.

9.3.2 Drainage from bunded areas shall be diverted for collection and safe disposal.

9.3.3 The integrity and water tightness of all the bunding structures and their resistance to penetration by water or other materials stored therein shall be tested and demonstrated by the licensee to the satisfaction of the Agency. All bunds shall be tested at least once every three years. A report on such tests shall be included in the AER.

- 9.3.4 The loading and unloading of materials shall be carried out in designated areas protected against spillage and leachate run-off. While awaiting disposal, all materials shall be collected and stored in designated areas protected against spillage and leachate run-off.
- 9.3.5 All pump sumps or other treatment plant chambers from which spillage might occur shall be fitted with high liquid level alarms.
- 9.3.6 The licensee shall undertake a programme of testing and inspection of underground tanks and pipelines to ensure that all underground effluent and foul sewer pipes are tested at least once every three years. A report on such tests shall be included in the AER.
- 9.3.7 An inspection for leaks on all flanges and valves on over-ground pipes used to transport materials other than water shall be carried out weekly.
- 9.3.8 The provision of a catchment system to collect any leaks from flanges and valves of all over ground pipes used to transport material other than water shall be examined. This shall be incorporated into a schedule of objectives and targets for the reduction in fugitive emissions set out in Condition 2.2 of this licence.
- 9.3.9 The licensee shall have in storage an adequate supply of containment booms and suitable absorbent material to contain and absorb any spillage.

*Reason: To provide for the protection of surface waters and groundwater.*

## Condition 10 Monitoring

- 10.1 The licensee shall carry out such sampling, analyses, measurements, examinations, maintenance and calibrations as set out in Schedules:-

*Schedule 1(ii) Emissions to Atmosphere: Abatement/Treatment Control*

*Schedule 1(iii) Monitoring of Emissions to Atmosphere*

*Schedule 2(ii) Effluent Treatment Control*

*Schedule 2(iii) Monitoring of Emissions to Sewer*

*Schedule 3(iii) Waste Analysis*

*Schedule 5 (i) Surface Water Discharge Monitoring*

*Schedule 5(ii) Groundwater Monitoring*

of this licence.

- 10.2 Where the ability to measure a parameter is affected by mixing before emission, then, with prior written agreement from the Agency, the parameter may be assessed before mixing takes place.
- 10.3 All automatic monitors and samplers shall be functioning at all times (except during maintenance and calibration) when the activity is being carried on unless alternative sampling or monitoring has been agreed in writing by the Agency for a limited period. In the event of the malfunction of any continuous monitor, the licensee shall contact the Agency as soon as practicable, and alternative sampling and monitoring facilities shall be put in place. Prior written agreement for the use of alternative equipment, other than in emergency situations, shall be obtained from the Agency.

- 10.4 Monitoring and analysis equipment shall be operated and maintained as necessary so that monitoring accurately reflects the emission or discharge.
- 10.5 The frequency, methods and scope of monitoring, sampling and analyses, as set out in this licence, may be amended with the written agreement of the Agency following evaluation of test results.
- 10.6 The licensee shall install on all emission points such sampling points or equipment, including any data-logging or other electronic communication equipment, as may be required by the Agency. All such equipment shall be consistent with the safe operation of all sampling and monitoring systems.
- 10.7 The licensee shall provide safe and permanent access to the following sampling and monitoring points:
- 10.7.1 Final effluent as discharged to the sewer.
  - 10.7.2 Emission to atmosphere sampling points.
  - 10.7.3 Noise sources on-site.
  - 10.7.4 Waste storage areas on-site.
  - 10.7.5 Surface waters discharge.
  - 10.7.6 On-site ground-water monitoring wells.

and safe access to any other sampling and monitoring points required by the Agency.

- 10.8 The licensee shall maintain in a prominent location on the site a wind sock, or other wind direction indicator, which shall be visible from the public roadway outside the site.

*Reason: To ensure compliance with the requirements of other conditions of this licence by provision of a satisfactory system of measurement and monitoring of emissions.*

## Condition 11 Recording and Reporting to Agency

- 11.1 The licensee shall record all sampling, analyses, measurements, examinations, calibrations and maintenance carried out in accordance with the requirements of this licence.
- 11.2 The licensee shall record all incidents which affect the normal operation of the activity and which may create an environmental risk.
- 11.3 The licensee shall record all complaints of an environmental nature related to the operation of the activity. Each such record shall give details of the date and time of the complaint, the name of the complainant and give details of the nature of the complaint. A record shall also be kept of the response made in the case of each complaint. The licensee shall submit a report to the Agency, during the month following such complaints, giving details of any complaints which arise. A summary of the number and nature of complaints received shall be included in the AER.
- 11.4 The format of all records required by this licence shall be to the satisfaction of the Agency. Records shall be retained on-site for a period of not less than seven years and shall be available for inspection by the Agency at all reasonable times.
- 11.5 Reports of all recording, sampling, analyses, measurements, examinations, calibrations and maintenance as set out in *Schedule 6(i) Recording and Reporting to the Agency* of this licence, shall be submitted to the Agency Headquarters as specified in this licence.



The format of these reports shall be to the satisfaction of the Agency. One original and three copies shall be submitted as and when specified.

- 11.6 Provision shall also be made for the transfer of environmental information, in relation to this licence, to the Agency's computer system, as may be requested by the Agency.
- 11.7 All reports shall be certified accurate and representative by the licensee's Plant Manager or other senior officer designated by the Plant Manager.
- 11.8 All written procedures controlling operations affecting this licence shall be available on-site for inspection by the Agency at all reasonable times.
- 11.9 The frequency and scope of reporting, as set out in this licence, may be amended with the written agreement of the Agency following evaluation of test results.

*Reason: To provide for the collection and reporting of adequate information on the activity.*

## Condition 12 Emergency Response

- 12.1 The licensee shall ensure that an Emergency Response Procedure is in place which shall address any emergency situation which may originate on-site. This Procedure shall include provision for minimising the effects of any emergency on the environment.

*Reason: To provide for the protection of the environment.*

## Condition 13 Financial Provisions

### 13.1 Agency Charges

- 13.1.1 The licensee shall pay to the Agency an annual contribution of £14,638, or such other sum as the Agency from time to time determines, towards the cost of monitoring the activity as the Agency considers necessary for the performance of its functions under the Environmental Protection Agency Act, 1992. The licensee shall in 2000 and subsequent years, not later than January 31 of each year, pay to the Agency this amount updated in accordance with changes in the Consumer Price Index from the date of the licence to the renewal date. The updated amount shall be notified to the licensee by the Agency. For 1999, the licensee shall pay a pro rata amount from the date of this licence to December 31, 1999. This amount shall be paid to the Agency within one month of the grant of this licence .

### 13.2 Sanitary Authority Charges

- 13.2.1 The licensee shall pay to the Sanitary Authority £0.05 per cubic metre of trade effluent and storm water discharged to the foul sewer or such sum as may be determined from time to time, having regard to the variations in the cost of providing drainage and the variation in effluent reception and treatment costs. Payment to be made annually.

13.2.2 The licensee shall pay an annual charge of £250 to the Sanitary Authority towards the cost of monitoring the trade effluent. This amount will be revised from time to time and payment to be made annually.

*Reason: To provide for adequate financing for monitoring and financial provisions for measures to protect the environment and to provide for the requirements of the sanitary authority in accordance with Section 97 of the EPA Act, 1992.*

## Schedule 1(i) Emissions to Atmosphere

|                                      |                          |                        |
|--------------------------------------|--------------------------|------------------------|
| <b>Emission Point Reference No.:</b> | CB1-01                   |                        |
| <b>Location :</b>                    | Chemical Building 1      |                        |
| <b>Volume to be emitted:</b>         | Maximum in any one day : | 720,000 m <sup>3</sup> |
|                                      | Maximum rate per hour :  | 30,000 m <sup>3</sup>  |
| <b>Minimum discharge height:</b>     | 35 m above ground        |                        |

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Hydrogen chloride                                      | 20 mg/m <sup>3</sup>                   |
| Dioxins (as TEQ)                                       | 0.1 ng/m <sup>3</sup>                  |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



|                                      |                          |                        |
|--------------------------------------|--------------------------|------------------------|
| <b>Emission Point Reference No.:</b> | CB1-02                   |                        |
| <b>Location :</b>                    | Chemical Building 1      |                        |
| <b>Volume to be emitted:</b>         | Maximum in any one day : | 268,800 m <sup>3</sup> |
|                                      | Maximum rate per hour :  | 11,200 m <sup>3</sup>  |
| <b>Minimum discharge height:</b>     | 21.5 m above ground      |                        |

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Hydrogen chloride                                      | 20 mg/m <sup>3</sup>                   |

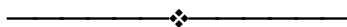
Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** CB1-03  
**Location :** Chemical Building 1  
**Volume to be emitted:** Maximum in any one day : 240,000 m<sup>3</sup>  
 Maximum rate per hour : 10,000 m<sup>3</sup>  
**Minimum discharge height:** 20.5 m above ground

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Ammonia  | 50 mg/m <sup>3</sup>                   |
| Hydrogen chloride                                      | 20 mg/m <sup>3</sup>                   |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** DR1-03  
**Location :** Dryer Room Scrubber  
**Volume to be emitted:** Maximum in any one day : 720,000 m<sup>3</sup>  
 Maximum rate per hour : 30,000 m<sup>3</sup>  
**Minimum discharge height:** 5 m above roof

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Particulates   | 1 mg/m <sup>3</sup>                    |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** DR1-04  
**Location :** Dryer House  
**Volume to be emitted:** Maximum in any one day : 1,440,000 m<sup>3</sup>  
 Maximum rate per hour : 60,000 m<sup>3</sup>  
**Minimum discharge height:** 10.63 m above ground

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Particulates   | 1 mg/m <sup>3</sup>                    |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** CB2-01  
**Location :** Chemical Building No.2  
**Volume to be emitted:** Maximum in any one day : 720,000 m<sup>3</sup>  
 Maximum rate per hour : 30,000 m<sup>3</sup>  
**Minimum discharge height:** 32 m above ground

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Hydrogen chloride                                      | 20 mg/m <sup>3</sup>                   |
| Dioxins (as TEQ)                                       | 0.1 ng/m <sup>3</sup>                  |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** CB2-18

**Location :** Chemical Building No.2

**Volume to be emitted:** Maximum in any one day : 360,000 m<sup>3</sup>  
Maximum rate per hour : 15,000 m<sup>3</sup>

**Minimum discharge height:** 32 m above ground

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Hydrogen Chloride                                      | 20 mg/m <sup>3</sup>                   |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** CB3-01

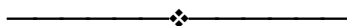
**Location :** Chemical Building No.3

**Volume to be emitted:** Maximum in any one day : 720,000 m<sup>3</sup>  
Maximum rate per hour : 30,000 m<sup>3</sup>

**Minimum discharge height:** 35 m above ground

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Hydrogen chloride                                      | 20 mg/m <sup>3</sup>                   |
| Dioxins (as TEQ)                                       | 0.1 ng/m <sup>3</sup>                  |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No.:** CB3-02

**Location :** Chemical Building No.3

**Volume to be emitted:** Maximum in any one day : 240,000 m<sup>3</sup>  
Maximum rate per hour : 10,000 m<sup>3</sup>

**Minimum discharge height:** 32 m above ground

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 100 mg/m <sup>3</sup>                  |
| Hydrogen Chloride                                      | 20 mg/m <sup>3</sup>                   |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



**Emission Point Reference No's.:** UT1-01/UT1-02/UT1-06/UT1-07/UT1-08/UT1-09

**Location :** Utility Building

**Minimum discharge height:** UT1-01, UT1-02 and UT1-06: 19.8 m above ground  
UT1-07, UT1-08 and UT1-09: 22 m above ground

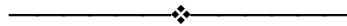
| Parameter                             | Emission Limit Value   |
|---------------------------------------|------------------------|
| Oxides of sulphur                     | 35 mg/m <sup>3</sup>   |
| Nitrogen oxides (as NO <sub>2</sub> ) | 200 mg/m <sup>3</sup>  |
| Carbon monoxide                       | 100 mg/m <sup>3</sup>  |
| Smoke                                 | < 1 (Ringelmann Shade) |



|                                      |                          |                        |
|--------------------------------------|--------------------------|------------------------|
| <b>Emission Point Reference No.:</b> | EP-01                    |                        |
| <b>Location :</b>                    | Peat Bed at Bio-plant    |                        |
| <b>Volume to be emitted:</b>         | Maximum in any one day : | 360,000 m <sup>3</sup> |
|                                      | Maximum rate per hour :  | 15,000 m <sup>3</sup>  |
| <b>Minimum discharge height:</b>     | 1.5 m above ground level |                        |

| Parameter  | Emission Limit Value <sup>Note 1</sup> |
|--|--|
| TA Luft Organics Class I (including dichloromethane)   | 20 mg/m <sup>3</sup>                   |
| TA Luft Organics Class II                              | 100 mg/m <sup>3</sup>                  |
| TA Luft Organics Class III (excluding dichloromethane) | 150 mg/m <sup>3</sup>                  |

Note 1: Where organic substances of several classes are emitted simultaneously, in addition to the above individual limits, the sum of the concentrations of Classes I, II and III shall not exceed the Class III limits.



## Other Emissions



| Vent   | Source  | Volumes to be emitted (m3) |                  | Min. Height (m)        | Emission Limit Value (mg/m <sup>3</sup> ) |
|--------|---|----------------------------|------------------|------------------------|---|
|        |   | Maximum per day            | Maximum per hour |                        |   |
| TAB-01 | Dust Collector from Tablet Coating            | 104,000                    | 4,350            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-02 | Dust Collector from Tablet Coating            | 104,000                    | 4,350            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-03 | Dust Collector from Sampling Room             | 10,200                     | 425              | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-04 | Dust Collector from Solution Preparation Room | 43,200                     | 1,800            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-05 | Dust Collector from Weighing Booths           | 187,200                    | 7,800            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-06 | Dust Collector from Weighing Booths           | 88,800                     | 3,700            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-10 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-11 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-12 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-13 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-14 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-15 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-16 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-17 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-18 | Fluid Bed Dryer                               | 180,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-19 | Dust Collector from Tablet Coating            | 104,000                    | 4,350            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-20 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-21 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-22 | Dust Collector                                | 43,200                     | 1,800            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-23 | Dust Collector                                | 187,200                    | 7,800            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-24 | Dust Collector                                | 88,800                     | 3,700            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-25 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-26 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-27 | Fluid bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-28 | Dust Collector                                | 104,000                    | 4,350            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-29 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-30 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-31 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-32 | Dust Collector                                | 104,000                    | 4,350            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-33 | Tablet Coater Vent                            | 180,000                    | 7,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |
| TAB-34 | Fluid Bed Dryer                               | 156,000                    | 6,500            | 27 metres above ground | 0.1 mg/m <sup>3</sup>                     |

|        |                                   |         |       |                        |                       |
|--------|-----------------------------------|---------|-------|------------------------|-----------------------|
| TAB-35 | Fluid Bed Dryer                   | 156,000 | 6,500 | 27 metres above ground | 0.1 mg/m <sup>3</sup> |
| TAB-36 | Tablet Coater Vent                | 180,000 | 7,500 | 27 metres above ground | 0.1 mg/m <sup>3</sup> |
| TAB-37 | Dust Emission from Dust Collector | 104,000 | 4,350 | 27 metres above ground | 0.1 mg/m <sup>3</sup> |
| TAB-38 | Tablet Coater Vent                | 180,000 | 7,500 | 27 metres above ground | 0.1 mg/m <sup>3</sup> |
| TAB-39 | Dust Collector                    | 10,200  | 425   | 27 metres above ground | 0.1 mg/m <sup>3</sup> |

### **Schedule 1(ii) Emissions to Atmosphere: Abatement/Treatment Control**

**Emission Point Reference No's.:** UT1-01/UT1-02/UT1-06/UT1-07/UT1-08/UT1-09

**Description of Treatment:** Boiler Stack Dispersion

**Monitoring :**

| Control Parameter     | Monitoring to be Carried Out | Monitoring Equipment |
|-----------------------|------------------------------|----------------------|
| Combustion efficiency | Stack gas analysis           | Stack gas analyser   |

**Equipment:**

| Control Parameter     | Equipment  | Backup equipment |
|-----------------------|------------|------------------|
| Combustion efficiency | Gas burner | Stand-by boilers |



**Emission Point Reference No's.:** CB1-01/CB2-01/3-01

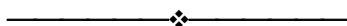
**Description of Treatment:** Thermal Oxidiser and scrubber

**Monitoring :**

| Control Parameter           | Monitoring to be Carried Out | Monitoring Equipment |
|-----------------------------|------------------------------|----------------------|
| <b>Thermal oxidiser</b>     |                              |                      |
| Stack flow                  | Continuous flow              | Flow transmitter     |
| Chamber temperature         | Continuous temperature       | Temperature elements |
| Outlet temperature          | Continuous temperature       | Temperature elements |
| Inlet temperature           | Continuous temperature       | Temperature elements |
| Inlet pressure              | Continuous pressure          | Pressure transmitter |
| Outlet pressure             | Continuous pressure          | Pressure transmitter |
| Lower explosive limit (LEL) | Continuous monitor           | LEL monitor          |
| TOC                         | Continuous TOC               | TOC analyser         |
| <b>Scrubber</b>             |                              |                      |
| Liquid flow                 | Flow indicator               | Flow indicator       |
| Liquid level                | Liquid level indicator       | Level indicator      |
| pH                          | pH level                     | pH probe             |

**Equipment:**

| Control Parameter           | Equipment            | Backup equipment              |
|-----------------------------|----------------------|-------------------------------|
| <b>Thermal oxidiser</b>     |                      |                               |
| Stack flow                  | Blower               | 2 blowers in use sharing load |
| Chamber temperature         | Temperature elements | Spares available              |
| Outlet temperature          | Temperature elements | Spares available              |
| Inlet temperature           | Temperature elements | Spares available              |
| Inlet pressure              | Pressure transmitter | Spares available              |
| Outlet pressure             | Pressure transmitter | Spares available              |
| Lower explosive limit (LEL) | LEL monitor          | Spares available              |
| TOC                         | TOC monitor          | Spares available              |
| <b>Scrubber</b>             |                      |                               |
| Liquid flow                 | Pumps                | Standby pump                  |
| Liquid level                | Level indicator      | Emergency water supply        |
| pH                          | pH meter             | Spare probe                   |



**Emission Point Reference No's.:** CB1-02

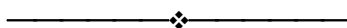
**Description of Treatment:** Carbon adsorption followed by general scrubber

**Monitoring :**

| Control Parameter     | Monitoring to be Carried Out   | Monitoring Equipment                               |
|-----------------------|--------------------------------|--|
| Air flow              | Continuous flow                | Pressure differential switch                       |
| Liquid flow           | Pump discharge pressure        | Pressure gauge                                     |
| Liquid concentration  | Concentration of liquid sample | Laboratory test                                    |
| Liquid level          | Level indication               | Level indicator                                    |
| Carbon bed efficiency | Carbon bed adsorption capacity | Laboratory test as per manufacturer's instructions |

**Equipment:**

| Control Parameter     | Equipment           | Backup equipment       |
|-----------------------|---------------------|------------------------|
| Liquid flow           | Recirculation pumps | Spares available       |
| Air flow              | Scrubber air fan    | 2 fans sharing load    |
| Liquid concentration  | Scrubber liquid     | Replacement liquid     |
| Carbon bed efficiency | Carbon bed          | Spare carbon available |



**Emission Point Reference No.:** CB1-03/2-18/3-02

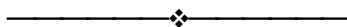
**Description of Treatment:** Scrubber

**Monitoring :**

| Control Parameter     | Monitoring to be Carried Out       | Monitoring Equipment        |
|-----------------------|------------------------------------|-----------------------------|
| Liquid flow           | Flow indication                    | Flow indicator              |
| Liquid temperature    | Liquid temperature indication      | Temperature indicator       |
| Liquid level          | Liquid level indication            | Level indicator             |
| Packing pressure drop | Pressure difference across packing | Differential pressure gauge |

**Equipment:**

| Control Parameter     | Equipment           | Backup equipment   |
|-----------------------|---------------------|--------------------|
| Liquid flow           | Recirculation pumps | Spares pump        |
| Liquid temperature    | Heat exchangers     | Spares available   |
| Liquid concentration  | Scrubber liquid     | Replacement liquid |
| Packing pressure drop | Packing             | Spares available   |



**Emission Point Reference No's.:** DR1-03/DR1-04

**Description of Treatment:** Scrubber

**Monitoring :**

| Control Parameter | Monitoring to be Carried Out | Monitoring Equipment         |
|-------------------|------------------------------|------------------------------|
| Air flow          | Pressure differential        | Pressure differential switch |
| Liquid flow       | Flow indication              | Flow indicator               |
| Liquid level      | Liquid level indication      | Level indicator              |

**Equipment:**

| Control Parameter | Equipment           | Backup equipment |
|-------------------|---------------------|------------------|
| Air flow          | Fan                 | 2 fans sharing   |
| Liquid flow       | Recirculation pumps | Spare pump       |
| Liquid level      | Level indicator     | Spares available |



**Emission Point Reference No.:** EP-01

**Description of Treatment:** Scrubber

**Monitoring :**

| Control Parameter | Monitoring to be Carried Out | Monitoring Equipment |
|-------------------|------------------------------|----------------------|
| Air flow          | Visual inspection of fan     | Visual               |
| Liquid flow       | Flow indication              | Flow indicator       |

**Equipment:**

| Control Parameter | Equipment           | Backup equipment |
|-------------------|---------------------|------------------|
| Air flow          | Fan                 | 2 fans sharing   |
| Liquid flow       | Recirculation pumps | Spares available |



**Emission Point Reference No's:** TAB-01, TAB-02, TAB-03, TAB-04, TAB-05, TAB-06, TAB-10, TAB-11, TAB-12, TAB-13, TAB-14, TAB-15, TAB-16, TAB-17, TAB-18, TAB-19, TAB-20, TAB-21, TAB-22, TAB-23, TAB-24, TAB-25, TAB-26, TAB-27, TAB-28, TAB-29, TAB-30, TAB-31, TAB-32, TAB-33, TAB-34, TAB-35, TAB-36, TAB-37, TAB-38 and TAB-39

**Description of Treatment:** HEPA filters

**Monitoring :**

| Control Parameter | Monitoring to be Carried Out                   | Monitoring Equipment         |
|-------------------|--|------------------------------|
| Air flow          | Flow rate at time of annual maintenance        | Digital manometer/Pitot tube |
| Filter integrity  | Continuous pressure differential across filter | Differential pressure gauge  |

**Equipment:**

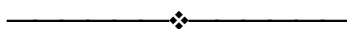
| Control Parameter | Equipment     | Backup equipment    |
|-------------------|---------------|---------------------|
| Air flow          | Fan           | Spares available    |
| Filter integrity  | Filter panels | Replacement filters |



### ***Schedule 1(iii) Monitoring of Emissions to Atmosphere***

**Emission Point Reference No's.:** UT1-01/UT1-02/UT1-06/UT1-07/UT1-08/UT1-09

| Parameter                             | Monitoring Frequency | Analysis Method/Technique |
|---------------------------------------|----------------------|---------------------------|
| Combustion Efficiency                 | Annually             | Stack gas analysis        |
| Nitrogen oxides (as NO <sub>2</sub> ) | Annually             | Flue gas analyser         |



**Emission Point Reference No's.:** CB1-01, CB2-01, CB3-01

| Parameter                  | Monitoring Frequency                                | Analysis Method/Technique |
|----------------------------|---|---------------------------|
| TOC                        | Continuous  | TOC analyser              |
| TA Luft Organics Class I   | Monthly   | GC                        |
| TA Luft Organics Class II  | Monthly   | GC                        |
| TA Luft Organics Class III | Monthly   | GC                        |
| Hydrogen chloride          | Continuous  | Infra-red                 |
| Dioxins (as TEQ)           | Quarterly for first year and bi-annually thereafter | US EPA Method 23          |



**Emission Point Reference No's.:** CB1-02, CB2-18, CB3-02

| Parameter                  | Monitoring Frequency | Analysis Method/Technique |
|----------------------------|----------------------|---------------------------|
| TOC                        | Continuous           | TOC analyser              |
| TA Luft Organics Class I   | Monthly              | GC                        |
| TA Luft Organics Class II  | Monthly              | GC                        |
| TA Luft Organics Class III | Monthly              | GC                        |
| Hydrogen chloride          | Monthly              | Wet chemistry method      |



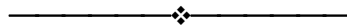
**Emission Point Reference No.:** CB1-03

| Parameter                  | Monitoring Frequency | Analysis Method/Technique |
|----------------------------|----------------------|---------------------------|
| TOC                        | Continuous           | TOC analyser              |
| TA Luft Organics Class I   | Monthly              | GC                        |
| TA Luft Organics Class II  | Monthly              | GC                        |
| TA Luft Organics Class III | Monthly              | GC                        |
| Hydrogen chloride          | Monthly              | Wet chemistry method      |
| Ammonia                    | Monthly              | Impingement/colorimetric  |



**Emission Point Reference No's.:** DR1-03/DR1-04

| Parameter                  | Monitoring Frequency | Analysis Method/Technique |
|----------------------------|----------------------|---------------------------|
| TOC                        | Continuous           | TOC analyser              |
| TA Luft Organics Class I   | Monthly              | GC                        |
| TA Luft Organics Class II  | Monthly              | GC                        |
| TA Luft Organics Class III | Monthly              | GC                        |
| Particulates               | Monthly              | Isokinetic/gravimetric    |

**Emission Point Reference No.:** EP-01

| Parameter                  | Monitoring Frequency | Analysis Method/Technique |
|----------------------------|----------------------|---------------------------|
| TA Luft Organics Class I   | Annually             | GC                        |
| TA Luft Organics Class II  | Annually             | GC                        |
| TA Luft Organics Class III | Annually             | GC                        |





## Schedule 2(i) Emissions to Sewer

|                                      |                                |                      |
|--------------------------------------|--------------------------------|----------------------|
| <b>Emission Point Reference No.:</b> | SE1                            |                      |
| <b>Name of Receiving Waters:</b>     | Cork County Council Foul sewer |                      |
| <b>Volume to be emitted:</b>         | Maximum in any one day :       | 2,400 m <sup>3</sup> |
|                                      | Maximum rate per hour :        | 135 m <sup>3</sup>   |

| Parameter               | Emission Limit Value |
|-------------------------|----------------------|
| Temperature             | 25°C (max.)          |
| pH                      | 6-9                  |
| Toxicity                | 10 TU                |
|                         | <b>mg/l</b>          |
| BOD                     | 2000                 |
| COD                     | 3000                 |
| Suspended Solids        | 250                  |
| Total Nitrogen          | 100                  |
| Total Ammonia (as N)    | 50                   |
| Total Phosphorus (as P) | 250                  |
| Zinc (as Zn)            | 1                    |



## Schedule 2(ii) Effluent Treatment Control

|                                      |                                  |
|--------------------------------------|----------------------------------|
| <b>Emission Point Reference No.:</b> | SE1                              |
| <b>Description of Treatment:</b>     | Biological Waste Water Treatment |

**Monitoring :**

| Monitoring to be Carried Out                  | Monitoring Frequency | Monitoring Equipment/Method |
|---|----------------------|-----------------------------|
| <b>COD (influent to biological treatment)</b> | Weekly               | Standard methods            |
| <b>Flow (ex Balance Tank)</b>                 | Continuous           | Flow Meter/Recorder         |
| <b>pH (ex Balance Tank)</b>                   | Continuous           | pH Meter/Recorder           |
| <b>Dissolved Oxygen (Aeration Basin)</b>      | Continuous           | DO Meter/Recorder           |
| <b>Flow (Final Effluent)</b>                  | Continuous           | Flow Meter/Recorder         |
| <b>pH (Final Effluent)</b>                    | Continuous           | pH Meter/Recorder           |
| <b>Mixed Liquor Suspended Solids</b>          | Daily                | Standard Methods            |
| <b>Sludge Volume Index</b>                    | Daily                | Standard Methods            |

**Equipment:**

| Control Parameter                   | Equipment  | Backup equipment   |
|-------------------------------------|--|--|
| <b>Effluent (pH) Neutralisation</b> | Caustic Dosing Pump<br>Agitator                        | Spares held on site<br>Spares held on site                   |
| <b>Effluent Transfer</b>            | Lift Pumps   | Standby pumps and spares held on site                        |
| <b>Suspended Solids (primary)</b>   | Agitator<br>Solid removal pumps<br>Skimmed solids pump | Spares held on site<br>Standby pumps and spares held on site |
| <b>Effluent Balancing</b>           | Agitator<br>Feed-forward pump                          | Spares held on site<br>Spares held on site                   |
| <b>Dissolved Oxygen</b>             | Fixed DO Meter   | Portable DO Meter  |
| <b>Suspended Solids (secondary)</b> | Sludge transfer pumps (x2)                             | Spares held on site  |
| <b>Sludge Dewatering</b>            | Filtration (Pumps x2) Poly-electrolyte                 | Spares held on site  |



## Schedule 2(iii) Monitoring of Emissions to Sewer

Emission Point Reference No.: SE1

| Parameter                          | Monitoring Frequency                              | Analysis Method/Technique        |
|------------------------------------|---|----------------------------------|
| Flow                               | Continuous  | On-line flow meter with recorder |
| pH                                 | Continuous  | pH electrode/meter and recorder  |
| Chemical Oxygen Demand             | Daily   | Standard Method                  |
| Biochemical Oxygen Demand          | Weekly  | Standard Method                  |
| Suspended Solids                   | Daily   | Gravimetric                      |
| Total Nitrogen (Kjeldahl)          | Monthly   | Standard Method                  |
| Total Ammonia (as N)               | Daily   | Ion selective electrode          |
| Total Phosphorus (as P)            | Daily   | Standard Method                  |
| Zinc                               | Monthly   | Standard Method                  |
| Organic Solvents <sup>Note 1</sup> | Monthly   | Gas Chromatography               |
| Toxicity <sup>Note 2</sup>         | Bi-Annually (24 hour flow proportional composite) | To be agreed with the Agency     |

Note 1: Screening for priority pollutant list substances. (such as CLP 40, US EPA volatile and or semi-volatile). This analysis shall include those organic solvents in use in the process, which are likely through normal process operations to be diverted to the waste water streams.

Note 2: The number of toxic units (Tu) = 100/x hour EC/LC<sub>50</sub> in percentage vol/vol so that higher Tu values reflect greater levels of toxicity. For test regimes where species death is not easily detected, immobilisation is considered equivalent to death.



### Schedule 3(i) Hazardous Wastes for Disposal/Recovery

| Waste Materials  | Further Treatment, Recovery/Recycling On-Site <sup>Note 1</sup> | On-Site Reuse <sup>Note1</sup> | Method of Disposal/Recovery <sup>Note 2</sup>         |
|--|---|--------------------------------|---|
| Mixed organic solvents, and mixed organic halogenated solvents | None  | None                           | Agreed hazardous waste disposal /recovery contractor. |
| Spent catalysts/charcoal                                       | None  | None                           | Agreed hazardous waste recovery contractor.           |
| Spent catalysts/caustic solution                               | None  | None                           | Agreed hazardous waste recovery contractor.           |
| Solid reaction residues  | None  | None                           | Agreed hazardous waste disposal contractor.           |
| Light tubes  | None  | None                           | Agreed hazardous waste recovery contractor.           |
| Product cakes/filter cakes                                     | None  | None                           | Agreed hazardous waste disposal contractor.           |
| Filters/Adsorbents, clothing                                   | None  | None                           | Agreed hazardous waste disposal contractor.           |
| Waste laboratory chemicals                                     | None  | None                           | Agreed hazardous waste disposal contractor.           |
| Batteries  | None  | None                           | Agreed hazardous waste recovery contractor.           |
| Redundant stocks   | None  | None                           | Agreed hazardous waste disposal/recovery contractor.  |
| Contaminated inert material (stone, gravel etc.)               | None  | None                           | Agreed hazardous waste disposal contractor.           |
| Pharmaceutical dusts   | None  | None                           | Agreed hazardous waste disposal contractor.           |
| Waste oils   | None  | None                           | Agreed hazardous waste recovery contractor.           |
| Other <sup>Note 3</sup>  |   |                                |   |

Note 1: The licensee may treat, reuse, recycle or recover waste subject to the prior written agreement of the Agency.

Note 2: Any variation from those contractors named in the IPC Licence application, or subsequent agreements, must have the prior written agreement of the Agency.

Note 3: No other hazardous waste shall be disposed of/recovered off-site or on site without prior notice to, and prior written agreement of the Agency.



### Schedule 3(ii) Other Wastes for Disposal/Recovery

| Waste Materials                                      | Further Treatment, Recovery/Recycling On-Site<br><small>Note 1</small> | On-Site Reuse<br><small>Note 1</small> | Method of Disposal/Recovery<br><small>Note 2</small> |
|--|--|--|--|
| General domestic type waste                          | None   | None                                   | Landfill   |
| Dewatered sludge from the wastewater treatment plant | None   | None                                   | Agreed disposal contractor.                          |
| Metal and plastic drums                              | Residue removal  | Not applicable                         | Agreed recovery contractor                           |
| Waste paper  | None   | None                                   | Agreed recovery contractor.                          |
| Other <small>Note 3</small>                          |  |  |  |

Note 1: The licensee may treat, reuse, recycle or recover waste subject to the prior written agreement of the Agency.

Note 2: Any variation from those contractors named in the IPC Licence application, or subsequent agreements, must have the prior written agreement of the Agency

Note 3: No other waste shall be disposed of/recovered off-site without prior notice to, and prior written agreement of the Agency.



### Schedule 3(iii) Waste Analysis

| Waste Class                 | Frequency       | Parameter  | Method   |
|-----------------------------|-----------------|--|--|
| Organic solvents            | Per consignment | Organic solvents -%<br>Organohalogens -%                             | GC/MS, GC  |
| Dewatered sludge            | Quarterly       | Organic matter<br>Organic compounds<br>Heavy metals<br>Water content | Loss on ignition<br>Extraction, GC/MS<br>Atomic absorption<br>Loss on ignition |
| Other <small>Note 1</small> | -               | -  | -  |

Note 1: Analytical requirements to be determined on a case by case basis.

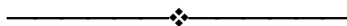


## Schedule 4(i) Noise

### Noise Sensitive Locations

| Location Reference      | Description                 | Grid Reference   |
|-------------------------|-----------------------------|------------------|
| D                       | Beach at north-east of site | E 179044 N063440 |
| Other <sup>Note 1</sup> | -                           | -                |

Note 1: Any other NSL which the Agency deems appropriate.



## Schedule 5 (i) Surface Water Discharge Monitoring

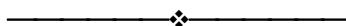
Emission Point Reference No's.: SE2 (North site outfall), SW3 (South site outfall),

SW4 (West car park outfall) and SW5 \* ( North site outfall )

|   |                          |                    |
|---|--------------------------|--------------------|
| <b>Volume to be emitted</b><br>(for SE 2 only): | Maximum in any one day : | 300 m <sup>3</sup> |
|   | Maximum rate per hour:   | 20 m <sup>3</sup>  |

| Parameter         | Monitoring Frequency | Analysis Method/Technique |
|-------------------|----------------------|---------------------------|
| pH                | Weekly               | pH electrode/meter        |
| TOC               | Continuous           | TOC continuous monitor    |
| TOC               | Weekly (SW4 only)    | TOC monitor               |
| Visual Inspection | Weekly               | Not Applicable            |

\* Effective only when SE2 is no longer in use.



## **Schedule 5(ii) Groundwater Monitoring**

Emission Point Reference No's:

MW-2, MW-5, EW-2 and EW-4

| <b>Parameter</b>                    | <b>Monitoring Frequency</b> | <b>Analysis Method/Technique</b>             |
|-------------------------------------|-----------------------------|--|
| <b>Total Petroleum Hydrocarbons</b> | Bi-annually                 | I.R. Spectroscopy                            |
| <b>Volatile Organic Carbons</b>     | Bi-annually                 | Purge and trap/GC/MS (U.S. EPA Method 524.4) |
| <b>Nitrate</b>                      | Bi-annually                 | Standard Method                              |
| <b>Total Ammonia</b>                | Bi-annually                 | Standard Method                              |
| <b>Major Cations</b>                | Bi-annually                 | Standard Method                              |
| <b>Major Anions</b>                 | Bi-annually                 | Standard Method                              |
| <b>Individual heavy metals</b>      | Bi-annually                 | Atomic absorption/ICP                        |
| <b>COD</b>                          | Bi-annually                 | Digestion/colorimetric                       |



## **Schedule 6(i) Recording and Reporting to the Agency**

Completed reports shall be submitted to:

The Environmental Protection Agency  
Headquarters  
PO Box 3000  
Johnstown Castle Estate  
Co. Wexford

**or** Any other address as may be specified by the Agency

Reports are required to be forwarded as set out below:

### **Recurring Reports:**

| <b>Report</b>                                | <b>Reporting Frequency</b> | <b>Report Submission Date</b>   |
|--|----------------------------|---|
| <b>Monitoring of emissions to atmosphere</b> | Quarterly                  | Ten days after end of the month being reported on.                        |
| <b>Monitoring of emissions to sewer</b>      | Quarterly                  | Ten days after end of the month being reported on.                        |
| <b>Surface Water</b>                         | Quarterly                  | Ten days after end of the month being reported on.                        |
| <b>Noise monitoring programme</b>            | Annually                   | One month prior to survey   |
| <b>Toxicity Report</b>                       | Annually                   | Within 6 weeks of completion of testing                                   |
| <b>Complaints (where these arise)</b>        | Monthly                    | Ten days after end of the month being reported on.                        |
| <b>Annual Environment Report (AER)</b>       | Annually                   | Twelve months from the date of grant of licence and each year thereafter. |



| Annual Environmental Report Content  | Items to be Addressed in the EMP   |
|--|--|
| <p>Emissions to atmosphere summary.</p> <p>Emissions to sewer summary.</p> <p>Surface water monitoring summary.</p> <p>Waste management report.</p> <p>Resource consumption summary.</p> <p>Complaints summary.</p> <p>Schedule of Environmental Objectives and Targets</p> <p>Environmental management programme - proposal</p> <p>Environmental management programme - report</p> <p>Pollution emission register - proposal</p> <p>Pollution emission register - report</p> <p>List I &amp; II substance reductions including reducing chlorinated solvents</p> <p>Noise monitoring report</p> <p>Groundwater monitoring summary</p> <p>Reported incidents summary</p> <p>Bund integrity testing results (every 3 years)</p> <p>Underground tank and pipeline test (every 3 years)</p> | <p>Process modifications resulting in improved yields, elimination or reduction of wastes or the use of alternative less hazardous materials</p> <p>Improved process control (equipment and management) to reduce waste</p> <p>Maintenance and calibration of key control and monitoring equipment</p> <p>Improvements in equipment cleaning procedures resulting in reduced materials usage or alternative materials usage</p> <p>Improvements in treatment/abatement systems to reduce emissions</p> <p>Use of alternative treatment/abatement systems</p> <p>Recovery, reuse, recycling of waste material both on-site and off-site</p> <p>Reduction in fugitive emissions</p> <p>Reduction in ammonia use</p> <p>Prevention of incidents with the potential for environmental consequences and the preparation and implementation of contingency plans in the event of an incident</p> <p>Savings in energy and material usage</p> <p>Reduction/elimination of thermal oxidiser by-passes</p> <p>Provision of catchment system for leaks from valves and flanges</p> |



**Once-off Reports:**

| Report                                       | Report Submission Date                               |
|--|--|
| <b>Test Programme as per Conditions 5.2.</b> | Prior to implementation.                             |
| <b>Toxicity Testing Scoping Proposal</b>     | Within three months of the date of grant of licence. |
| <b>Toxicity Test Report</b>                  | Within 6 weeks of completion of testing              |
| <b>Waste Strategy Plan</b>                   | Within 6 months of the date of grant of licence      |
| <b>TOC warning level proposal</b>            | Within six months of the date of grant of licence.   |



Signed on behalf of the Agency

Iain MacLean

Director/Authorised Person

Dated this 23rd day of September, 1999