



**ENVIRONMENT  
AGENCY**

# Permit with introductory note

Pollution Prevention and Control Regulations 2000

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Wilton Nylon Works  
INVISTA Textiles (UK) Ltd  
PO BOX 401  
Wilton Site  
Redcar  
TS10 4XY

Permit number

**BM2063**

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## Introductory note

### ***This introductory note does not form a part of the Permit***

The following Permit is issued under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations 2000 (S.I.2000 No.1973), as amended, ("the PPC Regulations") to operate an installation carrying out activities covered by the description in Sections 4.1 A(1)(a)(ii), 4.1 A(1)(a)(iv), 4.1 A(1)(a)(viii) and 4.2 A(1)(a)(ii) in Part 1 to Schedule 1 of the PPC Regulations, to the extent authorised by the Permit:

Section 4.1 A(1)(a)(ii) - "Producing organic chemicals such as organic compounds containing oxygen, such as alcohols, aldehydes, ketones, carboxylic acids, esters, ethers, peroxides, phenols, epoxy resins "

Section 4.1 A(1)(a)(iv) - "Producing organic chemicals such as organic compounds containing nitrogen, such as amines, amides, nitrous-, nitro- or azo-compounds, nitrates, nitriles, nitrogen heterocyclics, cyanates, isocyanates, di-isocyanates and di-isocyanate prepolymers"

Section 4.1 A(1)(a)(viii) - "Producing organic chemicals such as plastic materials, such as polymers, synthetic fibres and cellulose-fibres"

Section 4.2 A(1)(a)(ii) - "Producing inorganic chemicals such as acids, such as chromic acid, hydrofluoric acid, hydrochloric acid, hydrobromic acid, hydroiodic acid, phosphoric acid, nitric acid, sulphuric acid, oleum and chlorosulphonic acid"

Aspects of the operation of the installation which are not regulated by conditions of the Permit are subject to the condition implied by Regulation 12(10) of the PPC Regulations, i.e. the Operator shall use the best available techniques for preventing or, where that is not practicable, reducing emissions from the installation.

Techniques include both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned.

In some sections of the Permit conditions require the Operator to use Best Available Techniques (BAT), in each of the aspects of the management of the installation, to prevent and where that is not practicable to reduce emissions. The conditions do not explain what is BAT. In determining BAT, the Operator should pay particular attention to relevant sections of the IPPC Sector guidance, appropriate Horizontal guidance (H1 to H4) and other relevant guidance.

A non-technical description of the installation is given in the Application, but the main features of the installation are as follows.

The Wilton Nylon works, manufactures polyamides, predominantly Nylon (6.6) together with its main ingredients Adipic Acid (AA) and Hexamethylenediamine (HMD). Manufacturing is based on large scale continuous processes with the installation covering approximately 75 hectares. The main production areas comprise the KA plant, Nitric Acid Plants, Adipic Acid plant, HMD plant, Nylon Salt plant and the Nylon Polymer plant.

The KA plant produces Cyclohexanone (a ketone) and Cyclohexanol (an alcohol) and other distillate fractions from the oxidation of cyclohexane (imported by pipeline) with air. Until summer 2004 this reaction took place in the presence of boric acid. The permit incorporates changes to this process, which remove the need to use boric acid. The ketone/alcohol (KA) products are used as feedstock to the Adipic Acid plant.

Two Nitric Acid Plants produce nitric acid as a feedstock for the Adipic Acid plant. The process involves oxidation of ammonia (imported by pipeline) with air to produce gaseous nitrogen monoxide. The nitrogen monoxide is compressed and further oxidised with air to nitrogen dioxide, which is absorbed into demineralised water to form a solution of nitric acid.

The Adipic Acid plant produces adipic acid by reaction of KA with nitric acid. The crude adipic acid is refined and crystallised for use as a feedstock in the Nylon Salt plant and exported by road for use as raw material in a wide range of other industries. A major coproduct of adipic acid manufacture is a mixed stream of dibasic acids dissolved in methanol. This is exported by road and forms the basic raw material in manufacture of a range of water soluble non chlorinated solvents.

HMD and co-products and fuels are produced in the HMD plant by hydrogenation of adiponitrile (imported by pipeline) with hydrogen (imported by pipeline). Ammonia is used as a coolant. HMD is refined for use as a feedstock in the Nylon Salt plant and also for export by road tanker. Distillate fraction co-products are also exported for use off site.

The Nylon 6:6 Salt plant utilises adipic acid and HMD as feedstock. Adipic acid is dissolved in demineralised water and mixed with HMD under vacuum to produce the nylon salt. Nylon salt is used as a feedstock in the nylon polymer plant or exported by road tanker for use offsite.

The polymer is produced in granular form known as Nylon "chip" (or "flake") in the polymer plant. Nylon Salt is pumped via heat exchangers using steam as a heat transfer medium. A number of additives are used at low concentrations to confer specific properties on the final polymer. The prepared salt solution is then transferred to an evaporator for heating and concentration before passing through a series of Dowtherm heated autoclave reactors to produce the polymer. The polymer is extruded and cut into chips for transport offsite by road.

Production is supported by site services which include, distribution of ammonia (imported by pipeline) compression of imported hydrogen for use in HMD plant, steam distribution and cooling towers. KA and Nitric Acid can also be imported/exported from site by road to allow production flexibility.

Process heaters are fired on natural gas or a combination of natural gas and process co-products.

Process co-products used on site as fuel may include

- Dycal (trade name)
- COBoF (trade name)

The classification of these process derived fuels is being reviewed. If it is concluded that any are wastes their use on site as fuel is an activity which will be regulated under the Waste Incineration Directive 2000 (WID). If burning of waste is to take place, beyond the end of 2005, the operator must make an application to vary this Permit during the first quarter of 2005.

### **Process Releases**

Main atmospheric releases from the process comprise releases of oxides of nitrogen, carbon monoxide, ammonia, nitrous oxide and cyclohexane. There are also some lower mass releases of C1 to C5 hydrocarbons, benzene, sulphur dioxide and chromium.

The majority of aqueous releases are discharged via dedicated pipeline to Bran Sands sewage treatment works. Some aqueous effluent is released to Wilton Drains with a direct release to Dabholme Gut. The effluent exerts a biological oxygen demand (BOD) and also contains ammoniacal nitrogen, boron and some metals.

The application for a PPC permit includes completion of a project to improve the processes undertaken on the KA plant. This project known as non boric KA production will have significant environmental benefits (eliminating the use of chromium and boric acid in the process).

### **Environmental impact**

Detailed dispersion modelling has been carried out to assess the impact of releases from the installation on sensitive receptors (both human and environmental).

The installation is close to Teesmouth and Cleveland Coast Special Protection Areas (SPAs). Assessments required by the Habitats Directive and CROW Act have been completed.

Waste production is minimised and any wastes are reused, recycled or recovered where practicable.

Note that the Permit requires the submission of certain information to the Agency (see Sections 4 and 5). In addition, the Agency has the power to seek further information at any time under regulation 28 to the PPC Regulations provided that it acts reasonably.

| Other PPC Permits relating to this installation |               |               |
|-------------------------------------------------|---------------|---------------|
| Permit holder                                   | Permit Number | Date of Issue |
| <i>Not applicable</i>                           |               |               |

| Superseded Licences/Authorisations/Consents relating to this installation |                  |                   |
|---------------------------------------------------------------------------|------------------|-------------------|
| Holder                                                                    | Reference Number | Date of Issue     |
| <i>INVISTA Textiles (UK) Ltd</i>                                          | <i>AK3803</i>    | <i>22/02/1994</i> |

Other activities may take place on the site of this installation which are not regulated under this Permit or any other PPC Permit referred to in the Table above.

## **Public Registers**

Considerable information relating to Permits including the Application is available on public registers in accordance with the requirements of the PPC Regulations. Certain information may be withheld from public registers where it is commercially confidential or contrary to national security.

## **Variations to the Permit**

This Permit may be varied in the future (by the Agency serving a Variation Notice on the Operator). If the Operator itself wants any of the Conditions of the Permit to be changed, it must submit a formal Application. The Status Log within the Introductory Note to any such Variation Notice will include summary details of this Permit, variations issued up to that point in time and state whether a consolidated version of the Permit has been issued.

## **Surrender of the Permit**

Before this Permit can be wholly or partially surrendered, an Application to surrender the Permit has to be made by the Operator. For the application to be successful, the Operator must be able to demonstrate to the Agency that there is no pollution risk and that no further steps are required to return the site to a satisfactory state.

## Transfer of the Permit or part of the Permit

Before the Permit can be wholly or partially transferred to another person, an Application to transfer the Permit has to be made jointly by the existing and proposed holders. A transfer will be allowed unless the Agency considers that the proposed holder will not be the person who will have control over the operation of the installation or will not comply with the conditions of the transferred Permit. If, however, the Permit authorises the carrying out of a specified waste management activity, the transfer will only be allowed if the proposed holder is also considered to be "a fit and proper person" as required by the PPC Regulations.

## Talking to us

Please quote the Permit Number if you contact the Agency about this Permit.

To give a Notification under Condition 5.1.1, the Operator should use the Incident Hotline telephone number (0800 80 70 60) or any other number notified in writing to the Operator by the Agency for that purpose.

## Status Log

| Detail                                             | Date                          | Comment                                                                                                   |
|----------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------------------------------|
| <i>Application BM2063</i>                          | <i>Received 20/08/03</i>      |                                                                                                           |
| <i>Response to request for information</i>         | <i>Request dated 26/11/03</i> | <i>Response dated 12/12/03 and 17/12/03</i>                                                               |
| <i>Request to extend determination to 27/02/04</i> | <i>Request dated 01/12/03</i> | <i>Request accepted</i>                                                                                   |
| <i>Request to extend determination to 20/04/04</i> | <i>Request dated 24/02/04</i> | <i>Request accepted 26/02/04</i>                                                                          |
| <i>Site Report Addendum</i>                        | <i>Received 10/03/04</i>      | <i>Additional information relating to the Site Report establishing baseline conditions</i>                |
| <i>Request to extend determination to 18/06/04</i> | <i>Request dated 20/04/04</i> | <i>Request accepted 23/04/04</i>                                                                          |
| <i>Request to extend determination to 23/07/04</i> | <i>Request dated 23/06/04</i> | <i>Request accepted 24/06/04</i>                                                                          |
| <i>Request to extend determination to 30/09/04</i> | <i>Request dated 26/07/04</i> | <i>Request accepted 10/08/04</i>                                                                          |
| <i>Email dated 9/09/04</i>                         | <i>Received 9/09/04</i>       | <i>Additional information to confirm maintenance and inspection regime for effluent transfer pipeline</i> |
| <i>Request to extend determination to 15/10/04</i> | <i>Request dated 22/09/04</i> | <i>Request accepted 28/09/04</i>                                                                          |
| <i>Permit determined</i>                           | <i>15/10/04</i>               |                                                                                                           |

## End of Introductory Note.



## Permit

Permit number

**BM2063**

The Environment Agency (the Agency) in exercise of its powers under Regulation 10 of the Pollution Prevention and Control (England and Wales) Regulations (SI 2000 No 1973), hereby authorises

**INVISTA Textiles (UK) Ltd** ("the Operator"),

whose Registered Office (or principal place of business) is

**100 Barbirolli Square**

**Manchester**

**M2 3AB**

**Company registration number 04558109**

to operate an Installation(s) at

**INVISTA Textiles (UK) Ltd**

**PO BOX 401**

**Wilton**

**Redcar**

**TS10 4XY**

to the extent authorised by and subject to the conditions of this Permit.

Signed

Date

|  |  |
|--|--|
|  |  |
|--|--|

Andrew Clark

Regulatory Team Leader (PIR Permitting)

Nottingham Strategic Permitting Group

Authorised to sign on behalf of the Agency

# Conditions

## 1 General

### 1.1 Permitted Activities

- 1.1.1 The Operator is authorised to carry out the activities and the associated activities specified in Table 1.1.1.

**Table 1.1.1**

| <b>Activity listed in Schedule 1 of the PPC Regulations / Associated Activity</b>      | <b>Description of specified activity</b>                                                                                                                                            | <b>Limits of specified activity</b>                                                                                                        |
|----------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Section 4.1 A(1)(a)(ii)</i>                                                         | <i>Production of organic chemicals containing oxygen (manufacture of Cyclohexanone/Cyclohexanol and co-products in the KA plant and manufacture of adipic acid and co-products)</i> | <i>Receipt of raw materials to despatch of finished product.</i>                                                                           |
| <i>Section 4.1 A(1)(a)(iv)</i>                                                         | <i>Production of organic chemicals containing nitrogen (manufacture of Hexamethylenediamine and co-products)</i>                                                                    | <i>Receipt of raw materials to despatch of finished product.</i>                                                                           |
| <i>Section 4.1 A(1)(a)(viii)</i>                                                       | <i>Production of organic chemicals such as polymers (manufacture of nylon salt and nylon polymer)</i>                                                                               | <i>Receipt of raw materials to despatch of finished product.</i>                                                                           |
| <i>Section 4.2 A(1)(a)(ii)</i>                                                         | <i>Production of inorganic acids (manufacture of Nitric acid in two plants)</i>                                                                                                     | <i>Receipt of raw materials to despatch of finished product.</i>                                                                           |
| <i>Associated Activity: Effluent treatment</i>                                         | <i>Collection, transfer, pH adjustment, and flow balancing of effluent arising from the Permitted Installation.</i>                                                                 | <i>Effluent is transferred via a dedicated pipeline for treatment at the Northumbria Water Bran Sands Treatment Works</i>                  |
| <i>Associated Activity: Dowtherm heaters</i>                                           | <i>Operation of four Dowtherm heaters (combined thermal input &lt;50 MW).</i>                                                                                                       | <i>Fuel for heaters limited to natural gas and process derived fuels (Dycal, COBoF)</i>                                                    |
| <i>Storage and handling of raw materials</i>                                           | <i>Storage of solid and liquid materials in bulk storage tanks, drums, IBC's, bags and other containers</i>                                                                         | <i>Receipt and storage of raw materials to transfer to processing areas</i>                                                                |
| <i>Storage, handling and despatch of finished products, wastes and other materials</i> | <i>Storage of finished products. Process waste segregation and storage</i>                                                                                                          | <i>Storage of finished products, storage of waste in designated areas and loading for transit off site</i>                                 |
| <i>Control and abatement systems for emissions to air</i>                              | <i>Abatement of releases to air</i>                                                                                                                                                 | <i>Extraction and collection of waste gases and treatment via thermal destruction, scrubbers, condensers and coolers, and dust filters</i> |
| <i>Cooling water system</i>                                                            | <i>Cooling water supply, treatment and recirculation and purge to drain</i>                                                                                                         | <i>Cooling water towers and reservoir</i>                                                                                                  |
| <i>Utilities and Services</i>                                                          | <i>Operation of systems for process heating and distribution of utilities and services such as, nitrogen, compressed air, electricity and steam.</i>                                | <i>Site utility and services systems as far as the installation boundary.</i>                                                              |

1.1.2 Where waste on site is subjected to activities that are exempt from control under the Waste Management Licensing Regulations 1994 then the wastes controlled under condition 1.1.1, above, shall be clearly identified and kept separate from such exempt waste activities and a record shall be kept of where such exempt activities are conducted.

## **1.2 Site**

- 1.2.1 The activities authorised under condition 1.1.1 shall not extend beyond the Site, being the land shown edged in red on the Site Plan at Schedule 5 to this Permit.

## **1.3 Overarching Management Condition**

- 1.3.1 Without prejudice to the other conditions of this Permit, the Operator shall implement and maintain a management system, organisational structure and allocate resources that are sufficient to achieve compliance with the limits and conditions of this Permit.

## **1.4 Improvement Programme**

- 1.4.1 The Operator shall complete the improvements specified in Table 1.4.1 by the date specified in that table, and shall send written notification of the date of completion of each requirement to the Agency within 14 days of the completion of each such requirement.

**Table 1.4.1: Improvement programme**

| Reference | Requirement                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Date         |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
| IC1       | The Operator shall undertake a direct toxicity assessment of the discharge to the Wilton Site drains from emission points W1 and W4 or otherwise demonstrate to the Agency's satisfaction that the Installation does not give rise to acute toxic effects in the receiving waters. The results of this assessment shall be submitted in writing to the Environment Agency including, where appropriate, a timetable for improvements to prevent any acute toxic effects in the receiving waters.                                                                                                    | 1 July 05    |
| IC2       | The Operator shall complete a condition survey of all underground pipework. The survey shall have regard to the BAT requirements given in section 2.2.5 of the "Guidance for the Large Volume Organic Chemicals Sector" –IPPC S4.01. A written report shall be submitted to the Environment Agency, for approval, that summarises the findings of the survey/s, provides details of any necessary improvements and indicates the proposed implementation timetable. The report shall also include plans for regular inspections, condition surveys and maintenance in the future.                   | 1 January 07 |
| IC3       | The Operator shall provide the Environment Agency with a written procedure to regularly review fugitive releases from the installation demonstrating the application of an appropriate effective and structured LDAR (leak detection and repair) system; as stated in the "Guidance for the Large Volume Organic Chemicals Sector"- IPPC S4.01 and include an action plan to implement any improvements identified. The operator shall periodically update the review and action plan. A copy of the written procedure and the outcome of the first review shall be sent to the Environment Agency. | 1 January 07 |
| IC4       | The Operator shall submit a written report to the Environment Agency that reviews the monitoring methods used on site for demonstrating compliance with limits in table 2.2.2. By Reference to Section 2.10.4 of the "Guidance for the Large Volume Organic Chemicals Sector" –IPPC S4.01 the report should identify Best Available Techniques (BAT) for each parameter/location analysed and shall include an action plan to implement any improvements identified.                                                                                                                                | 1 June 06    |
| IC5       | The Operator shall submit a written report to the Environment Agency describing the environmental impact of the installation following commissioning of the "Non Boric" process modifications. The report shall provide                                                                                                                                                                                                                                                                                                                                                                             | 1 January 06 |

comparison of environmental performance of the original and new non boric process and shall also include a reassessment of potential impact at the future planned production rates described in the application. An electronic copy of the H1 assessment (or other equivalent assessment tool used) shall be supplied with the report to the Agency.

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|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |
|------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| IC6  | The Operator shall submit a written report to the Environment Agency that summarises a review of the provision of MCERTS accreditation for the monitoring equipment, personnel and organisations employed for the emissions monitoring program in condition 2.10.1. The report shall also propose a timetable for achieving this standard for any elements that are not MCERTS certified.                                                                                                                                                       | 1 June 06      |
| IC7  | The Operator shall provide, in writing, a protocol used by the Operator to determine 'uncertainty' values associated with each parameter to be reported for each emission point together with an indication of the likely uncertainty values associated with the test methods to be used.                                                                                                                                                                                                                                                       | 1 June 06      |
| IC8  | The Operator shall submit in writing, a report confirming that all monitoring required for all parameters listed in Table 2.2.2 are representative. Specific derogation from requirements of BS EN 13284-1:2002 and ISO 10396:1993, as appropriate for particulate and gaseous emissions respectively, are to be indicated. The report shall include the feasibility, cost and time required to implement changes to meet the standard requirements.                                                                                            | 1 March 05     |
| IC9  | The Operator shall undertake a review of abatement options available to reduce emissions of nitrous oxide, from emission point N1. Reference should be made to the guidance in the "Guidance for the Inorganic Chemicals Sector" –IPPC S4.03. A written report shall be submitted to the Agency which shall include a timetabled action plan to implement any improvements identified.                                                                                                                                                          | 1 June 07      |
| IC10 | The Operator shall submit a written report to the Environment Agency reviewing performance and uptime of the COGA unit. The report shall include detailed examination of durations and causes of downtime together with details of changes implemented to improve uptime and proposals for future improvements. In particular the report shall demonstrate how a minimum annual average availability of abatement for N <sub>2</sub> O of 95% will be achieved by 31 December 06.                                                               | 1 June 05      |
| IC11 | The Operator shall review the environmental fate of copper and vanadium used in the process. All routes to the environment shall be considered in the review including the fate of these metals leaving the installation in waste streams going off site for recovery. The Operator shall submit a written Report to the Environment Agency to demonstrate BAT. Particular attention should be given to demonstrating that the techniques are the most effective in achieving a high general level of protection to the environment as a whole. | 1 September 05 |

|      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|
| IC12 | The Operator shall submit a written report to the Environment Agency to demonstrate that the site procedures used for calculating nitrous oxide and oxides of carbon released from the process provide an accurate assessment of the releases. The demonstration shall include details of monitoring undertaken over a representative range of operating conditions.                                                                                                                                                                                                                                                                                                                                            | 1 September 06 |
| IC13 | The Operator shall submit a written report to the Environment Agency that demonstrates that effluent treatment of all releases from the installation represents BAT. The report shall consider both average and maximum loading conditions. Where the current effluent treatment does not achieve the benchmark release values indicated in the "Guidance for the Large Volume Organic Chemicals Sector" –IPPC S4.01 the report shall include options for improvement and if applicable shall include a proposed timetable for implementing improvements to achieve BAT.                                                                                                                                        | 1 January 06   |
| IC14 | The Operator shall review the purchase specification of all raw materials which potentially contain substances listed in the Dangerous Substances Directive for discharges to surface water. A written report shall be submitted to the Environment Agency which identifies and quantifies the main sources of Dangerous Substances Directive List I and II substances released to sewer (including the Wilton Site Drains) from the process. Subject to commercial availability and an assessment of BAT the Operator shall change to the use of "mercury free" caustic.                                                                                                                                       | 1 January 08   |
| IC15 | The Operator shall undertake a review of the monitoring programme for releases to air where environmental impact assessment shows a potential impact in excess of 1% of the long term environmental assessment level (EAL). The operator shall submit a written report to the Environment Agency with a detailed proposal for installation of continuous emission monitors or monitoring of equivalent parameters or other technical measures which could be used as alternative surrogate controls. Where surrogates are proposed these should be fully justified with reference to existing monitoring data or alternatively propose future trials to demonstrate the effectiveness of the surrogate control. | 1 January 07   |

1.4.2 Where the Operator fails to comply with any requirement by the date specified in Table 1.4.1 the Operator shall send written notification of such failure to the Agency within 14 days of such date.

## **1.5 Minor Operational Changes**

- 1.5.1 The Operator shall seek the Agency's written agreement to any minor operational changes under condition 2.1.1 of this Permit by sending to the Agency: written notice of the details of the proposed change including an assessment of its possible effects (including waste production) on risks to the environment from the Permitted Installation; any relevant supporting assessments and drawings; and the proposed implementation date.
- 1.5.2 Any such change shall not be implemented until agreed in writing by the Agency. As from the agreed implementation date, the Operator shall operate the Permitted Installation in accordance with that change, and relevant provisions in the Application shall be deemed to be amended.
- 1.5.3 When the qualification "unless otherwise agreed in writing" is used elsewhere in this Permit, the Operator shall seek such agreement by sending to the Agency written notice of the details of the proposed method(s) or techniques.
- 1.5.4 Any such method(s) or techniques shall not be implemented until agreed in writing by the Agency. As from the agreed implementation date, the Operator shall operate the Permitted Installation using that method or technique, and relevant provisions in the Application shall be deemed to be amended.

## **1.6 Pre-Operational Conditions**

- 1.6.1 There are no pre-operational conditions.

## **1.7 Off-site Conditions**

- 1.7.1 There are no off-site conditions.

## 2 Operating conditions

### 2.1 In-Process Controls

- 2.1.1 The Permitted Installation shall, subject to the conditions of this Permit, be operated using the techniques and in the manner described in the documentation specified in Table 2.1.1, or as otherwise agreed in writing by the Agency in accordance with conditions 1.5.1 and 1.5.2 of this Permit.

| Table 2.1.1: Operating techniques                                                    |                                                                                                                                                                        |                              |
|--------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|
| Description                                                                          | Parts                                                                                                                                                                  | Date Received                |
| <i>Application</i>                                                                   | <i>The response to questions 2.1 and 2.2 given in section B2 2.2 and 2.3 (excluding boric assisted KA manufacture described in section 2.3 a(1) of the application</i> | <i>20/08/03</i>              |
| <i>Additional Information</i>                                                        | <i>The responses to the request for further information dated 26/11/03</i>                                                                                             | <i>12/12/03 and 17/12/03</i> |
| <i>Additional information regarding the effluent transfer pipeline to Bran Sands</i> | <i>Effluent pipeline maintenance and inspection procedures described in email dated 9/09/04</i>                                                                        | <i>9/09/04</i>               |

### 2.2 Emissions

#### 2.2.1 Emissions to Air, (including heat, but excluding Odour, Noise or Vibration) from Specified Points

- 2.2.1.1 This Part 2.2.1 of this Permit shall not apply to releases of odour, noise or vibration.
- 2.2.1.2 Emissions to air from the emission points in Table 2.2.1 shall only arise from the source(s) specified in that Table.

**Table 2.2.1 : Emission points to air**

| Emission point reference or description | Source                           | Location of emission point |
|-----------------------------------------|----------------------------------|----------------------------|
| N1                                      | Nitric Acid plant Concrete Stack | Grid Ref : 456532 521305   |
| N2                                      | Nitric Tank Vents                | Grid Ref : 456444 521225   |
| S1                                      | WALE tank                        | Grid Ref : 456785 520770   |
| S2                                      | COGA                             | Grid Ref : 456558 520691   |
| S3                                      | AA2 Absorber (note 1)            | Grid Ref : 456681 520820   |
| S4                                      | HMD Synthesis stack (note 1)     | Grid Ref : 456511 520789   |
| S5                                      | HMD Refinery Stack               | Grid Ref : 456455 520770   |
| S6                                      | Catalyst Reduction Stack         | Grid Ref : 456510 520810   |
| S7                                      | Ammonia Recovery Stack           | Grid Ref : 456528 520757   |
| S8                                      | 20% Ammonia tank vent            | Grid Ref : 456499 520732   |
| N3                                      | KA HP absorber (note 1)          | Grid Ref : 456228 520773   |
| N4                                      | KA LP absorber                   | Grid Ref : 456251 520801   |
| N5                                      | Recycle Tank                     | Grid Ref : 456521 520787   |
| N6                                      | No 1 Buffer Storage              | Grid Ref : 456138 521012   |
| N7                                      | No 2 Buffer Storage              | Grid Ref : 456138 521012   |
| P1                                      | Thermex Heater East Stack        | Grid Ref : 456546 521034   |
| P2                                      | Thermex Heater West Stack        | Grid Ref : 456515 521020   |

Note 1: These sources are normally vented to the COGA

2.2.1.3 The limits for emissions to air for the parameter(s) and emission point(s) set out in Table 2.2.2 shall not be exceeded.

**Table 2.2.2 : Emission limits to air and monitoring**

| Emission point reference | Parameter                                | Limit (including Reference Period) <sup>1</sup> | Monitoring frequency | Monitoring method |
|--------------------------|------------------------------------------|-------------------------------------------------|----------------------|-------------------|
| N1                       | Oxides of Nitrogen (as NO <sub>2</sub> ) | 400 mg/m <sup>3</sup> hourly average (note 3)   | Continuous (note 2)  | ISO 10849:1996    |
| S2                       | Oxides of Nitrogen (as NO <sub>2</sub> ) | 700 mg/m <sup>3</sup> hourly average (note 4)   | Continuous (note 2)  | ISO 10849:1996    |
| S2                       | Carbon Monoxide                          | 100 mg/m <sup>3</sup> hourly average (note 4)   | Continuous (note 2)  | ISO 12039:2001    |
| S4                       | Ammonia                                  | (note5)                                         | (note5)              | (note5)           |
| S6                       | Ammonia                                  | (note5)                                         | (note5)              | (note5)           |
| S8                       | Ammonia                                  | (note5)                                         | (note5)              | (note5)           |

Note 1: See Section 6 for reference conditions

Note 2: For continuous monitoring no more than 5% of the hourly average values during any rolling twelve month period shall exceed the limit and no hourly average shall exceed the limit by more than 50%.

Note 3: These limits shall not apply during start up and shut down of the Nitric Acid plant. Start up shall not exceed 4 1/2 hours and shut down shall not exceed 1 hour.

Note 4: These limits do not apply within 48 hours of starting up the COGA unit or within 2 hours of stopping or starting gas feeds to the COGA unit

Note 5: To be set following completion of condition 1.4 Improvement Programme IC15

2.2.1.4 No condition applies.

## **2.2.2 Emissions to water (other than groundwater), including heat, from specified points**

2.2.2.1 This Part 2.2.2 of this Permit shall not apply to releases of odour, noise or vibration or to releases to groundwater.

### **Emissions to Water (other than to Sewer)**

2.2.2.2 Conditions 2.2.2.3 - 2.2.2.6 shall not apply to emissions to sewer.

2.2.2.3 No emission from the Permitted Installation shall be made to water except via the Operator's connections to the Wilton Site drainage system as specified in this Permit (see below under emissions to sewer).

2.2.2.4 No condition applies

2.2.2.5 No condition applies

2.2.2.6 No condition applies

### **Emissions to sewer**

2.2.2.7 Emissions to the Wilton Site Drainage System Sewer from the specified emission points in Table 2.2.7 shall only arise from the source(s) specified in that Table.

**[Table 2.2.7 Emission points to sewer]**

| <b>Emission point reference or description</b> | <b>Source</b>                                                                                                                                                                                                                                                                          | <b>Sewer</b>                               |
|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|
| <i>W1</i>                                      | <i>Overflow from Acids 1 No. 1 effluent pit</i><br><i>Overflow from W4 surface water drain</i><br><i>Uncontaminated surface water drainage and cooling water purge and steam blowdown /condensate</i><br><i>KA plant, Services, Nitric Acid and HMD plant process drains and sumps</i> | <i>Wilton Site C drain</i>                 |
| <i>W4</i>                                      | <i>Process effluent from polymer plant</i><br><i>Polymer plant process drains and sumps</i><br><i>Overflows from Adipic &amp; Salt Plant sumps</i><br><i>Uncontaminated surface water drainage and cooling water purge and steam blowdown /condensate</i>                              | <i>Wilton Site C drain</i>                 |
| <i>WALE</i>                                    | <i>WALE (sources to the WALE comprise effluents from the installation)</i>                                                                                                                                                                                                             | <i>transfer pipeline to NWL Bran Sands</i> |

2.2.2.8 The limits for the emissions to sewer for the parameter(s) and emission point(s) set out in Table 2.2.8 shall not be exceeded.

**Table 2.2.8 : Emission limits and monitoring frequency to sewer**

| Emission point reference | Substance            | Limit (including Reference Period) | Monitoring frequency           | Monitoring method                                          |
|--------------------------|----------------------|------------------------------------|--------------------------------|------------------------------------------------------------|
| W1                       | Total Organic Carbon | 800 mg/l (Note 1)                  | Continuous                     | BS EN1484                                                  |
| W1                       | Total Organic Carbon | 2.5 t/day                          | Daily composite                | High temperature non-dispersive infra red to ISO 8245.1999 |
| W1                       | Cu                   | 10 mg/l                            | Daily composite                | BS EN 11885:1998                                           |
| W1                       | Cu                   | 1 kg/day                           | Daily composite                | BS EN 11885:1998                                           |
| W1                       | NH3 as nitrogen      | 1 t/day                            | Daily composite                | ISO 7150-2:1986                                            |
| W1                       | pH max               | 11                                 | Continuous                     | pH probe                                                   |
|                          | pH min               | 5                                  |                                |                                                            |
| W4                       | Total Organic Carbon | 500 mg/l (Note 1)                  | Continuous                     | BS EN1484                                                  |
| W4                       | Total Organic Carbon | 2 t/day                            | Daily flow weighted composite  | High temperature non-dispersive infra red to ISO 8245.1999 |
| W4                       | Cu                   | 9 mg/l                             | Daily composite                | BS EN 11885:1998                                           |
| W4                       | Cu                   | 1.5 kg/day                         | Daily composite                | BS EN 11885:1998                                           |
| W4                       | NH3 as nitrogen      | 0.45 t/day                         | Daily composite                | ISO 7150-2:1986                                            |
| W4                       | pH max               | 11                                 | Continuous                     | pH probe                                                   |
|                          | pH min               | 5                                  |                                |                                                            |
| WALE                     | Cu                   | 10 kg/day (Note 3)                 | Weekly flow weighted composite | Colourimetric method EPA 3500 Cu-E                         |

Note1: Compliance with these limits is based on no more than 5% of the hourly average values during any rolling 24 hour average exceeding the limit.

Note2: Compliance with these limits is based on no more than 5% of the daily average values during any rolling twelve month exceeding the limit and no daily average shall exceed the limit by more than 50%.

Note3: Compliance with these limits is based on no more than 5% of the weekly average values during any rolling twelve month exceeding the limit and no weekly average shall exceed the limit by more than 50%.

2.2.2.9 Where a substance is specified in Table 2.2.8 but no limit is set for it, the concentration of such substance in emissions to sewer from the relevant emission point shall be no greater than the background concentration.

2.2.2.10 Total emissions in any year of a substance listed in Table 2.2.9 shall not exceed the relevant limit in that Table

**Table 2.2.9 Annual emission limit**

| Substance      | Annual limit – kg |
|----------------|-------------------|
| <i>Cadmium</i> | 1                 |
| <i>Mercury</i> | 1                 |

## 2.2.3 Emissions to groundwater

- 2.2.3.1 No emission from the Permitted Installation shall give rise to the introduction into groundwater of any substance in List I (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).
- 2.2.3.2 No emission from within the Permitted Installation shall give rise to the introduction into groundwater of any substance in List II (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)) so as to cause pollution (as defined in the Groundwater Regulations 1998 (S.I. 1998 No. 2746)).
- 2.2.3.3 For substances other than those in List I or II (as defined in the Groundwater Regulations 1998 (SI 1998 No.2746)), the Operator shall use BAT to prevent or where that is not practicable to reduce emissions to groundwater from the Permitted Installation provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

## 2.2.4 Fugitive emissions of substances to air

- 2.2.4.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce fugitive emissions of substances to air from the Permitted Installation in particular from:
- storage areas
  - buildings
  - pipes, valves and other transfer systems
  - open surfaces
- provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.
- 2.2.4.2 The Operator shall use BAT so as to prevent or where that is not practicable to reduce emissions of litter from the Permitted Installation provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

## **2.2.5 Fugitive emissions of substances to water and sewer**

2.2.5.1 Subject to condition 2.2.5.2 below, the Operator shall use BAT so as to prevent or where that is not practicable to reduce fugitive emissions of substances to water (other than Groundwater) and sewer from the Permitted Installation in particular from:

- all structures under or over ground
- surfacing
- bunding
- storage areas

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

2.2.5.2 There shall be no release to water that would cause a breach of an EQS established by the UK Government to implement the Dangerous Substances Directive 76/464/EEC.

## **2.2.6 Odour**

2.2.6.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce odorous emissions from the Permitted Installation, in particular by:

- limiting the use of odorous materials
- restricting odorous activities
- controlling the storage conditions of odorous materials
- controlling processing parameters to minimise the generation of odour
- optimising the performance of abatement systems
- timely monitoring, inspection and maintenance
- employing, where appropriate, an approved odour management plan

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant..

## **2.2.7 Emissions to Land**

2.2.7.1 This Part 2.2.7 of this Permit shall not apply to emissions to groundwater.

2.2.7.2 No emission from the Permitted installation shall be made to land.

2.2.7.3 No condition applies.

## **2.2.8 Equivalent Parameters or Technical Measures**

2.2.8.1 The Operator shall comply with the requirements specified in Table 2.2.11, which supplement or replace emission limit values in accordance with Regulation 12(8) of the PPC Regulations.

**Table 2.2.11 Equivalent parameters and technical measures**

| Parameter or measure                                       | Requirement or description of measure, and frequency if relevant                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| COGA availability                                          | Process releases from the adipic acid off gas absorber shall be abated in the COGA unit for a minimum of 90% of the time (annual average).                                                                                                                                                                                                                                                                                                            |
| N <sub>2</sub> O release from emission point N1            | The concentration of N <sub>2</sub> O shall not exceed 2000 mg/m <sup>3</sup> (hourly average) based on release calculated in accordance with the DEFRA agreed site Procedure For Determining And Reporting The Emission Of Greenhouse Gases To Atmosphere From The Nitric Acid Plant. This is to be reviewed following completion of condition 1.4 Improvement Programme IC12                                                                        |
| Thermex heater stack releases (emission points P1 and P2). | The Operator shall implement and maintain appropriate procedures and controls to ensure efficient combustion within the Thermex heaters. The procedures shall ensure that releases of oxides of nitrogen, carbon monoxide and sulphur dioxide are minimised and this shall be confirmed by an appropriate programme of monitoring.<br><br>Dycal used as a fuel on the Thermex heaters shall contain no more than 2.5% Boric Acid and 850ppm Chromium. |
| Plant Start up and Shut down                               | The Operator shall implement and maintain appropriate procedures and controls to minimise the quantity and impact of releases during Plant Start up and Shut down.                                                                                                                                                                                                                                                                                    |

## 2.3 Management

- 2.3.1 A copy of this Permit and those parts of the application referred to in this Permit shall be available, at all times, for reference by all staff carrying out work subject to the requirements of the Permit.

### **Training**

- 2.3.2 The Permitted Installation shall be supervised by staff who are suitably trained and fully conversant with the requirements of this Permit.
- 2.3.3 All staff shall be fully conversant with those aspects of the Permit conditions which are relevant to their duties and shall be provided with adequate professional technical development and training and written operating instructions to enable them to carry out their duties.
- 2.3.4 The Operator shall maintain a record of the skills and training requirements for all staff whose tasks in relation to the Permitted Installation may have an impact on the environment and shall keep records of all relevant training.

### ***Maintenance***

- 2.3.5 All plant and equipment used in operating the Permitted Installation, the failure of which could lead to an adverse impact on the environment, shall be maintained in good operating condition.
- 2.3.6 The Operator shall maintain a record of relevant plant and equipment covered by condition 2.3.5 and for such plant and equipment:
  - 2.3.6.1 a written or electronic maintenance programme; and
  - 2.3.6.2 records of its maintenance.

### ***Incidents and Complaints***

- 2.3.7 The Operator shall maintain and implement written procedures for:
  - 2.3.7.1 taking prompt remedial action, investigating and reporting actual or potential non-compliance with operating procedures or emission limits and if such event occur;
  - 2.3.7.2 investigating incidents, (including any malfunction, breakdown or failure of plant, equipment or techniques, down time, any short term and long term remedial measures and near misses) and prompt implementation of appropriate actions; and
  - 2.3.7.3 ensuring that detailed records are made of all such actions and investigations.
- 2.3.8 The Operator shall record and investigate complaints concerning the Permitted Installation's effects or alleged effects on the environment. The record shall give the date and nature of complaint, time of complaint, name of complainant (if given), a summary of any investigation and the results of such investigation and any actions taken.

## **2.4 Efficient use of raw materials**

- 2.4.1 The Operator shall -
  - 2.4.1.1 maintain the raw materials table or description submitted in response to Section 2.4 of the Application and in particular consider on a periodic basis whether there are suitable alternative materials to reduce environmental impact;
  - 2.4.1.2 carry out periodic waste minimisation audits and water use efficiency audits. If such an audit has not been carried out in the 2 years prior to the issue of this Permit, then the first such audit shall take place within 2 years of its issue. The methodology used and an action plan for increasing the efficiency of the use of raw materials or water shall be submitted to the Agency within 2 months of completion of each such audit and a review of the audit and a description of progress made against the action plan shall be submitted to the Agency at least every 4 years thereafter; and
  - 2.4.1.3 ensure that incoming water use is directly measured and recorded.

## **2.5 Waste Storage and Handling**

- 2.5.1 The Operator shall design, maintain and operate all facilities for the storage and handling of waste on site such that there are no releases to water or land during normal operation and that emissions to air and the risk of accidental release to water or land are minimised.

## **2.6 Waste recovery or disposal**

- 2.6.1 Waste produced at the Permitted Installation shall be recycled or recovered unless technically and/or economically impossible.
- 2.6.2 The Operator shall maintain the waste recovery or disposal table or description submitted in response to Section 2.6 of the Application and in particular identify the best practicable environmental options for waste disposal.
- 2.6.3 The Operator shall maintain and implement a system which ensures that a record is made of the quantity, composition, origin, destination (including whether this is a recovery or disposal operation) and where relevant removal date of any waste that is produced at the Permitted Installation.

## **2.7 Energy Efficiency**

- 2.7.1 The Operator shall produce a report on the energy consumed at the Permitted Installation over the previous calendar year, by 31 January each year, providing the information required by condition 4.1.2.
- 2.7.2 The Operator shall maintain and update annually an energy management system which shall include, in particular, the monitoring of energy flows and targeting of areas for improving energy efficiency.
- 2.7.3 The Operator shall design, maintain and operate the Permitted Installation so as to secure energy efficiency, taking into account relevant guidance including the Agency's Energy Efficiency Horizontal Guidance Note H2 as from time to time amended. Energy efficiency shall be secured in particular by:
- ensuring that the appropriate operating and maintenance systems are in place;
  - ensuring that all plant is adequately insulated to minimise energy loss or gain;
  - ensuring that all appropriate containment methods, (e.g. seals and self-closing doors) are employed and maintained to minimise energy loss;
  - employing appropriate basic controls, such as simple sensors and timers, to avoid unnecessary discharge of heated water or air;
  - where building services constitute more than 5% of the total energy

consumption of the installation, identifying and employing the appropriate energy efficiency techniques for building services, having regard in particular to the Building services part of the Agency's Energy Efficiency Horizontal Guidance Note H2; and

- maintaining and implementing an energy efficiency plan which identifies energy saving techniques that are applicable to the activities and their associated environmental benefit and prioritises them, having regard to the appraisal method in the Agency's Energy Efficiency Horizontal Guidance Note H2.

## **2.8 Accident prevention and control**

- 2.8.1 The Operator shall maintain and implement when necessary the accident management plan submitted or described in response to Section 2.8 of the Application. The plan shall be reviewed at least every 2 years or as soon as practicable after an accident, whichever is the earlier, and the Agency notified of the results of the review within 2 months of its completion.

## **2.9 Noise and Vibration**

- 2.9.1 The Operator shall use BAT so as to prevent or where that is not practicable to reduce emissions of noise and vibration from the Permitted Installation, in particular by:
- equipment maintenance, eg. of fans, pumps, motors, conveyors and mobile plant;
  - use and maintenance of appropriate attenuation, eg. silencers, barriers, enclosures;
  - timing and location of noisy activities and vehicle movements;
  - periodic checking of noise emissions, either qualitatively or quantitatively; and
  - maintenance of building fabric,

provided always that the techniques used by the Operator shall be no less effective than those described in the Application, where relevant.

## **2.10 On-site Monitoring**

- 2.10.1 The Operator shall maintain and implement an emissions monitoring programme which ensures that emissions are monitored from the specified points, for the parameters listed in and to the frequencies and methods described in Tables 2.2.2 and 2.2.8, unless otherwise agreed in writing, and that the results of such monitoring are assessed. The programme shall ensure that monitoring is carried out under an appropriate range of operating conditions.

- 2.10.2 The Operator shall carry out environmental or other specified monitoring to the frequencies and methods described in Table 2.10.1 unless otherwise agreed in writing.

**Table 2.10.1 : Other monitoring requirements**

| Emission point reference or source or description of point of measurement | Substance or parameter | Monitoring frequency | Monitoring method                                                 | Other specifications |
|---------------------------------------------------------------------------|------------------------|----------------------|-------------------------------------------------------------------|----------------------|
| W1                                                                        | Flow                   | Continuous           | Ultrasonic level combined with Doppler radar velocity measurement |                      |
| W4                                                                        | Flow                   | Continuous           | Ultrasonic level combined with Doppler radar velocity measurement |                      |

- 2.10.3 No condition applies
- 2.10.4 No condition applies.
- 2.10.5 The Operator shall notify the Agency at least 14 days in advance of undertaking monitoring and/ or spot sampling, where such notification has been requested in writing by the Agency.
- 2.10.6 The Operator shall maintain records of all monitoring taken or carried out (this includes records of the taking and analysis of samples instrument measurements (periodic and continual), calibrations, examinations, tests and surveys) and any assessment or evaluation made on the basis of such data.
- 2.10.7 Monitoring equipment, techniques, personnel and organisations employed for the emissions monitoring programme in condition 2.10.1 of this Permit and the environmental or other monitoring specified in condition 2.10.2 shall have either MCERTS certification or MCERTS accreditation (as appropriate) unless otherwise agreed in writing.
- 2.10.8 There shall be provided:
- 2.10.8.1 safe and permanent means of access to enable sampling/monitoring to be carried out in relation to the emission points specified in Schedule 2 to this Permit, unless otherwise specified in that Schedule; and
- 2.10.8.2 safe means of access to other sampling/monitoring points when required by the Agency.

## 2.11 Closure and Decommissioning

- 2.11.1 The Operator shall maintain and operate the Permitted Installation so as to prevent or minimise any pollution risk, including the generation of waste, on closure and decommissioning in particular by:-

- 2.11.1.1 attention to the design of new plant or equipment;
  - 2.11.1.2 the maintenance of a record of any events which have, or might have, impacted on the condition of the site along with any further investigation or remediation work carried out; and
  - 2.11.1.3 the maintenance of a site closure plan to demonstrate that the installation can be decommissioned avoiding any pollution risk and returning the site of operation to a satisfactory state.
- 2.11.2 Notwithstanding condition 2.11.1 of this Permit, the Operator shall carry out a full review of the Site Closure Plan at least every 4 years.
- 2.11.3 The site closure plan shall be implemented on final cessation or decommissioning of the Permitted activities or part thereof.
- 2.11.4 The Operator shall give at least 30 days written notice to the Agency before implementing the site closure plan.

## **2.12 Multiple Operator installations**

- 2.12.1 This is not a multi-Operator installation

## **2.13 Transfer to effluent treatment plant**

- 2.13.1 No transfers to effluent treatment plant are controlled under this part of this Permit.
- 2.13.2 No condition applies

### **3 Records**

- 3.1 The Operator shall ensure that all records required to be made by this Permit and any other records made by it in relation to the operation of the Permitted Installation shall:-
- 3.1.1 be made available for inspection by the Agency at any reasonable time;
  - 3.1.2 be supplied to the Agency on demand and without charge;
  - 3.1.3 be legible;
  - 3.1.4 be made as soon as reasonably practicable;
  - 3.1.5 indicate any amendments which have been made and shall include the original record wherever possible;
  - 3.1.6 be retained at the Permitted Installation, or other location agreed by the Agency in writing, for a minimum period of 4 years from the date when the records were made, unless otherwise agreed in writing; and
  - 3.1.7 where they concern the condition of the site of the Installation be kept at the Permitted Installation, or other location agreed by the Agency in writing, until all parts of the Permit have been surrendered.

## **4 Reporting**

- 4.1.1 All reports and written and or oral notifications required by this Permit and notifications required by Regulation 16 of the PPC Regulations shall be made or sent to the Agency using the contact details notified in writing to the Operator by the Agency.
- 4.1.2 The Operator shall, unless otherwise agreed in writing, submit reports of the monitoring and assessment carried out in accordance with the conditions of this permit, as follows:-
  - 4.1.2.1 in respect of the parameters and emission points specified in Table S2 to Schedule 2;
  - 4.1.2.2 for the reporting periods specified in Table S2 to Schedule 2 and using the forms specified in Table S3 to Schedule 3;
  - 4.1.2.3 giving the information from such results and assessments as may be required by the forms specified in those Tables; and
  - 4.1.2.4 to the Agency within 28 days of the end of the reporting period.
- 4.1.3 The Operator shall submit to the Agency a report on the performance of the Permitted Installation over the previous year, by 31 January each year, providing the information listed in Tables S4.1 and S4.2 of Schedule 4, assessed at any frequency specified therein, and using the form specified in Table S3 to Schedule 3.
- 4.1.4 The Operator shall review fugitive emissions, having regard to the application of Best Available Techniques, on an annual basis, or such other period as shall be agreed in writing by the Agency, and a summary report on this review shall be sent to the Agency detailing such releases and the measures taken to reduce them within 3 months of the end of such period.
- 4.1.5 Where the Operator has a formal environmental management system applying to the Permitted Installation which encompasses annual improvement targets the Operator shall, not later than 31 January in each year, provide a summary report of the previous year's progress against such targets.
- 4.1.6 The Operator shall, within 6 months of receipt of written notice from the Agency, submit to the Agency a report assessing whether all appropriate preventive measures continue to be taken against pollution, in particular through the application of the best available techniques, at the installation. The report shall consider any relevant published technical guidance current at the time of the notice which is either supplied with or referred to in the notice, and shall assess the costs and benefits of applying techniques described in that guidance, or otherwise identified by the Operator, that may provide environmental improvement.

## 5 Notifications

5.1.1 The Operator shall notify the Agency **without delay** of:-

- 5.1.1.1 the detection of an emission of any substance which exceeds any limit or criterion in this Permit specified in relation to the substance;
- 5.1.1.2 the detection of any fugitive emission which has caused, is causing or may cause significant pollution unless the quantity emitted is so trivial that it would be incapable of causing significant pollution;
- 5.1.1.3 the detection of any malfunction, breakdown or failure of plant or techniques which has caused, is causing or has the potential to cause significant pollution; and
- 5.1.1.4 any accident which has caused, is causing or has the potential to cause significant pollution.

5.1.2 The Operator shall submit written confirmation to the Agency of any notification under condition 5.1.1, by sending:-

- 5.1.2.1 the information listed in Part A of Schedule 1 to this Permit within 24 hours of such notification; and
- 5.1.2.2 the more detailed information listed in Part B of that Schedule as soon as practicable thereafter;

and such information shall be in accordance with that Schedule.

5.1.3 The Operator shall give written notification as soon as practicable prior to any of the following:-

- 5.1.3.1 permanent cessation of the operation of part or all of the Permitted Installation;
- 5.1.3.2 cessation of operation of part or all of the Permitted Installation for a period likely to exceed 1 year; and
- 5.1.3.3 resumption of the operation of part or all of the Permitted Installation after a cessation notified under condition 5.1.3.2.

5.1.4 The Operator shall notify the Agency, as soon as reasonably practicable, of any information concerning the state of the Site which adds to that provided to the Agency as part of the Application.

5.1.5 The Operator shall notify the following matters to the Agency in writing within 14 days of their occurrence:-

- 5.1.5.1 where the Operator is a registered company:-
  - any change in the Operator's trading name, registered name or registered office address;
  - any change to particulars of the Operator's ultimate holding company (including details of an ultimate holding company where an Operator has become a subsidiary)
  - any steps taken with a view to the Operator going into administration, entering into a company voluntary arrangement or being wound up;
- 5.1.5.2 where the Operator is a corporate body other than a registered company:
  - any change in the Operator's name or address;
  - any steps taken with a view to the dissolution of the Operator.
- 5.1.5.3 In any other case: -
  - the death of any of the named Operators (where the Operator consists of more than one named individual);

**Notifications**

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- any change in the Operator's name(s) or address(es);
- any steps taken with a view to the Operator, or any one of them, going into bankruptcy, entering into a composition or arrangement with creditors, or, in the case them being in a partnership, dissolving the partnership;

5.1.6 Where the Operator has entered into a Climate Change Agreement with the Government, the Operator shall notify the Agency within one month of:-

- 5.1.6.1 a decision by the Secretary of State not to re-certify that Agreement.
- 5.1.6.2 a decision by either the Operator or the Secretary of State to terminate that agreement.
- 5.1.6.3 any subsequent decision by the Secretary of State to re-certify such an Agreement.

5.1.7 Where the Operator has entered into a Direct Participant Agreement in the Emissions Trading Scheme which covers emissions relating to the energy consumption of the activities, the Operator shall notify the Agency within one month of:-

- 5.1.7.1 a decision by the Operator to withdraw from or the Secretary of State to terminate that agreement.
- 5.1.7.2 a failure to comply with an annual target under that Agreement at the end of the trading compliance period.

## 6 Interpretation

6.1.1 In this Permit, the following expressions shall have the following meanings:-

*"Application"* means the application for this Permit, together with any response to a notice served under Schedule 4 to the PPC Regulations, the supplementary information dated 12 and 17 December 200 and any operational change agreed under the conditions of this Permit.

*"background concentration"* means such concentration of that substance as is present in:

- water supplied to the site; or
- where more than 50% of the water used at the site is directly abstracted from ground or surface water on site, the abstracted water; or
- where the Permitted Installation uses no significant amount of supplied or abstracted water, the precipitation on to the site.

*"BAT"* means best available techniques means the most effective and advanced stage of development of activities and their methods of operation which indicates the practical suitability of particular techniques to prevent and where that is not practicable to reduce emissions and the impact on the environment as a whole. For these purposes: "available techniques" means "those techniques which have been developed on a scale which allows implementation in the relevant industrial sector, under economically and technically viable conditions, taking into consideration the cost and advantages, whether or not the techniques are used or produced inside the United Kingdom, as long as they are reasonably accessible to the operator"; "best" means "in relation to techniques, the most effective in achieving a high general level of protection of the environment as a whole" and "techniques" "includes both the technology used and the way in which the installation is designed, built, maintained, operated and decommissioned." . In addition, Schedule 2 of the PPC Regulations has effect in relation to the determination of BAT.

*"Fugitive emission"* means an emission to air or water (including sewer) from the Permitted Installation which is not controlled by an emission or background concentration limit under conditions 2.2.1.3, 2.2.2.4, 2.2.2.5, 2.2.2.8 or 2.2.2.9 of this Permit.

*"Groundwater"* means all water which is below the surface of the ground in the saturation zone and in direct contact with the ground or subsoil.

*"Land Protection Guidance"* means the version of the Agency guidance note "H7 - Guidance on the Protection of Land under the PPC Regime: Application Site Report and Site Protection and Monitoring Programme", including its appended templates for data reporting, which is current at the time of issue of the Permit.

*" $L_{Aeq,T}$ "* means the equivalent continuous A-weighted sound pressure level in dB determined over time period, T.

*" $L_{A90,T}$ "* means the A-weighted sound pressure level in dB exceeded for 90% of the time period, T.

*" $L_{AFmax}$ "* means the maximum A weighted sound level measurement in dB measured with a fast time weighting.

*"MCERTS"* means the Environment Agency's Monitoring Certification Scheme.

*"Monitoring"* includes the taking and analysis of samples, instrumental measurements (periodic and continual), calibrations, examinations, tests and surveys.

*"Permitted Installation"* means the activities and the limits to those activities described in Table 1.1.1 of this Permit.

## Interpretation

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*"PPC Regulations"* means the Pollution, Prevention and Control (England and Wales) Regulations SI 2000 No.1973 (as amended) and words and expressions defined in the PPC Regulations shall have the same meanings when used in this Permit save to the extent they are specifically defined in this Permit.

*"Sewer"* means sewer within the meaning of section 219(1) of the Water Industry Act 1991. Specifically, in this permit, it refers to the Wilton Site Drainage System operated on behalf of the Wilton Site Operators by Sembcorp Utilities Teesside Ltd – SUTL holders of the Water Resources Act Consent No QR 25/04/1528 which permits the discharge of the Wilton Drainage System to controlled waters.

*"Staff"* includes employees, directors or other officers of the Operator, and any other person under the Operator's direct or indirect control, including contractors.

*"Year"* means calendar year ending 31 December.

- 6.1.2 Where a minimum limit is set for any emission parameter, for example pH, reference to exceeding the limit shall mean that the parameter shall not be less than that limit.
- 6.1.3 Unless otherwise stated, any references in this Permit to concentrations of substances in emissions into air means:-
  - 6.1.3.1 in relation to gases from combustion processes, the concentration in dry air at a temperature of 273K, at a pressure of 101.3 kPa and with an oxygen content of 3% dry for liquid and gaseous fuels, 6% dry for solid fuels; and/or
  - 6.1.3.2 in relation to gases from non-combustion sources, the concentration at a temperature of 273K and at a pressure of 101.3 kPa, with no correction for water vapour content.
- 6.1.4 Where any condition of this Permit refers to the whole or parts of different documents, in the event of any conflict between the wording of such documents, the wording of the document(s) with the most recent date shall prevail to the extent of such conflict.

## Schedule 1 - Notification of abnormal emissions

This page outlines the information that the Operator must provide to satisfy conditions 5.1.1 and 5.1.2 of this Permit.

Units of measurement used in information supplied under Part A and B requirements shall be appropriate to the circumstances of the emission. Where appropriate, a comparison should be made of actual emissions and authorised emission limits.

If any information is considered commercially confidential, it should be separated from non-confidential information, supplied on a separate sheet and accompanied by an application for commercial confidentiality under the provisions of the PPC Regulations.

### Part A

|                               |  |
|-------------------------------|--|
| Permit Number                 |  |
| Name of Operator              |  |
| Location of Installation      |  |
| Location of the emission      |  |
| Time and date of the emission |  |

| Substance(s) emitted | Media | Best estimate of the quantity or the rate of emission | Time during which the emission took place |
|----------------------|-------|-------------------------------------------------------|-------------------------------------------|
|                      |       |                                                       |                                           |
|                      |       |                                                       |                                           |

|                                                               |  |
|---------------------------------------------------------------|--|
| Measures taken, or intended to be taken, to stop the emission |  |
|---------------------------------------------------------------|--|

### Part B

|                                                                                                                                                                |  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Any more accurate information on the matters for notification under Part A.                                                                                    |  |
| Measures taken, or intended to be taken, to prevent a recurrence of the incident                                                                               |  |
| Measures taken, or intended to be taken, to rectify, limit or prevent any pollution of the environment or harm which has been or may be caused by the emission |  |
| The dates of any unauthorised emissions from the installation in the preceding 24 months.                                                                      |  |

|           |  |
|-----------|--|
| Name*     |  |
| Post      |  |
| Signature |  |
| Date      |  |

\* authorised to sign on behalf of INVISTA (UK) Ltd]

## Schedule 2 - Reporting of monitoring data

Parameters for which reports shall be made, in accordance with conditions 4.1.2 and 4.1.3 of this Permit, are listed below.

| Table S2: Reporting of monitoring data                         |                |                  |               |
|----------------------------------------------------------------|----------------|------------------|---------------|
| Parameter                                                      | Emission point | Reporting period | Period begins |
| Oxides of Nitrogen (as NO <sub>2</sub> )<br>mg m <sup>-3</sup> | N1, S2         | Every 6 months   | 01/07/04      |
| Nitrous Oxide<br>mg m <sup>-3</sup>                            | N1             | Every 6 months   | 01/07/04      |
| Carbon Monoxide<br>mg m <sup>-3</sup>                          | S2             | Every 6 months   | 01/07/04      |
| Flow m <sup>3</sup> /hr                                        | W1, W4         | Every 6 months   | 01/07/04      |
| Flow m <sup>3</sup> /day                                       | W1, W4         | Every 6 months   | 01/07/04      |
| Total Organic Carbon<br>mg/l                                   | W1, W4         | Every 6 months   | 01/07/04      |
| Total Organic Carbon<br>t/day                                  | W1, W4         | Every 6 months   | 01/07/04      |
| Copper mg/l                                                    | W1, W4         | Every 6 months   | 01/07/04      |
| Copper kg/day                                                  | W1, W4, WALE   | Every 6 months   | 01/07/04      |
| pH                                                             | W1, W4         | Every 6 months   | 01/07/04      |
| Ammoniacal Nitrogen<br>t/day                                   | W1, W4         | Every 6 months   | 01/07/04      |
| Water usage                                                    |                | Every 12 months  | 01/01/04      |
| Energy usage                                                   |                | Every 12 months  | 01/01/04      |
| Waste disposal and/or recovery.                                |                | Every 12 months  | 01/01/04      |
| Performance Indicators                                         |                | Every 12 months  | 01/01/04      |
| COGA downtime and use of vents S3, S4 and N3                   | S3, S4, N3     | Every 6 months   | 01/07/04      |
| Nitric Acid Plant Start up and attempted Start ups             | N1             | Every 6 months   | 01/07/04      |

## Schedule 3 - Forms to be used

| <b>Table S3: Reporting Forms</b>  |                    |                                        |
|-----------------------------------|--------------------|----------------------------------------|
| <b>Media / parameter</b>          | <b>Form Number</b> | <b>Date of Form</b>                    |
| <i>Air</i>                        | <i>A1</i>          | <i>Agency Form BM2063/A1/15-10-04</i>  |
| <i>Sewer</i>                      | <i>S1</i>          | <i>Agency Form BM2063/S1/15-10-04</i>  |
| <i>Energy</i>                     | <i>E1</i>          | <i>Agency Form BM2063/E1/15-10-04</i>  |
| <i>Waste Return</i>               | <i>R1</i>          | <i>Agency Form BM2063/R1/15-10-04</i>  |
| <i>Water usage</i>                | <i>WU1</i>         | <i>Agency Form BM2063/WU1/15-10-04</i> |
| <i>Performance indicators</i>     | <i>PI1</i>         | <i>Agency Form BM2063/PI1/15-10-04</i> |
| <i>COGA Availability</i>          | <i>CA1</i>         | <i>Agency Form BM2063/CA1/15-10-04</i> |
| <i>Nitric Acid Plant start up</i> | <i>NA1</i>         | <i>Agency Form BM2063/CA1/15-10-04</i> |

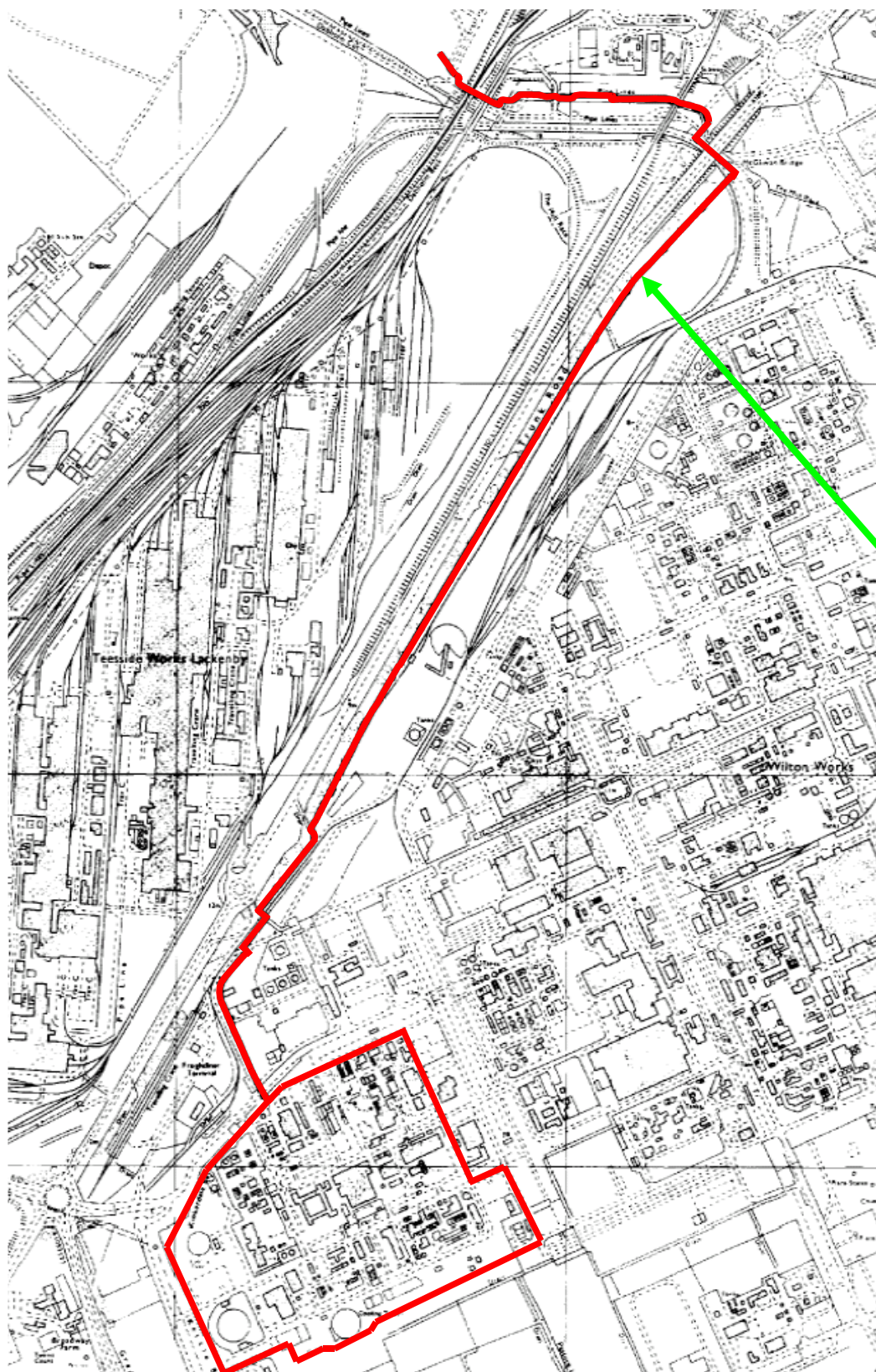
## Schedule 4 - Reporting of performance data

Data required to be recorded and reported by Condition 4.1.3. The data should be assessed at the frequency given and reported annually to the Agency.

| Table S4.1: Annual Production/Treatment   |               |
|-------------------------------------------|---------------|
| <i>Production of organics: Nylon Salt</i> | <i>tonnes</i> |
| <i>Production of organic polymers</i>     | <i>tonnes</i> |
| <i>Production of Co-Products and Fuel</i> | <i>tonnes</i> |

| Table S4.2: Performance parameters                                                 |  |                         |                                   |
|------------------------------------------------------------------------------------|--|-------------------------|-----------------------------------|
| Parameter                                                                          |  | Frequency of assessment | Performance indicator             |
| <i>BOD (ratio of BOD discharged to WALE/total BOD discharge from installation)</i> |  | <i>Monthly</i>          | <i>%</i>                          |
| <i>Potable water use</i>                                                           |  | <i>Quarterly</i>        | <i>m<sup>3</sup>/t Nylon Salt</i> |
| <i>Non potable water use</i>                                                       |  | <i>Quarterly</i>        | <i>m<sup>3</sup>/t Nylon Salt</i> |
| <i>Waste Hazard Score</i>                                                          |  | <i>Quarterly</i>        |                                   |
| <i>Waste Disposal Score</i>                                                        |  | <i>Quarterly</i>        |                                   |
| <i>COGA uptime</i>                                                                 |  | <i>Quarterly</i>        | <i>%</i>                          |

## Schedule 5 - Site Plan



Route of the  
Effluent  
Transfer  
Pipeline to  
Bran Sands  
Sewage  
Treatment  
Works

END OF PERMIT