ENVIRONMENTAL PROTECTION ACT 1990, PART I

ENVIRONMENTAL PROTECTION (PRESCRIBED PROCESSES AND SUBSTANCES) 1991 SI472 (as amended)

ENVIRONMENTAL PROTECTION (APPLICATIONS, APPEALS AND REGISTERS) REGULATIONS 1991, SI507

MALDON DISTRICT COUNCIL

Application received 30.9.92

Authorisation reference MLD7/1/93

Maldon District Council hereby authorise E T Heron and Company Limited, The Bentall Complex, Colchester Road, Heybridge, MALDON, Essex in accordance with the conditions numbered 1 to 43 inclusive and the attached figure 1, to carry on a printing process as prescribed in Section 6.5 of Schedule 1 of the Environmental Protection (Prescribed Processes and Substances) Regulations 1991 SI No 1991,472 and as described below at:-

E T Heron and Company Limited
The Bentall Complex
Colchester Road
Heybridge
MALDON
Essex

and as outlined in red on the attached Figure 1.

DESCRIPTION OF AUTHORISED PROCESS

The application and drying of printing ink to paper and subsequent finishing operations involving the use of not more than 120 tonnes of organic solvent per annum involving the following operations:-

- the storage of inks and organic solvents in drums of 210 litres capacity,
- the storage of heat set web offset ink in bulk storage containers of approximately 1 tonne capacity
- the heat set web offset printing of paper using:-
- one Baker Perkins G16 4 colour unit heat set press with a gas fired hot air oven with a net rated thermal input of 1100 $kW_{(th)}$
- one Baker Perkins G14 4 colour unit heat set press with a gas fired hot air oven with a net rated thermal input of 1100 $kW_{(th)}$
- one Baker Perkins G12 5 colour unit heat set press with a gas fired hot air oven with a net rated thermal input of 1100 $kW_{(th)}$
- one Heidelberg Harris M850C web offset printing press - 4 units and folder producing A3 and A4 work at a top speed of 32,500 copies/h or 670 m/min. Included also are one Stork reelstand and one Stork 12 metre oven (gas fired hot air with end cooling section).
- all oven emissions from these print units being discharged to a Katec Thermal Oxidation System for the control of volatile organic compounds.
- the cleaning of the heat set web offset printing units by roller cleaning using automatic blanket washing equipment
- the sheet fed offset printing of paper using 3 off Heidelberg printing presses, one with 2 colour units and 2 with 4 colour units

- ancillary binding and finishing operations involving the use of folding machines, guillotines, trimmer stitchers and perfect binding equipment using hot melt adhesives, and packaging operations,

- the venting of process air containing waste paper and particulate matter from the ancillary binding and finishing operations to an Airmat compactor with exhaust air being discharged into a bag filter.

CONDITIONS

The requirements of the conditions attached to this authorisation shall come into effect on the date indicated in the individual condition or if no date is indicated shall take effect immediately.

Upgrading of Process

1. Changes necessary in order to upgrade the process and the timetable for the implementation of these changes, having regard to the guidance contained in Secretary of State's Guidance note PG6/16(92) - Printworks shall be notified to the Council in writing no later than 1 July 1994.

Emission Limits and Controls

2. Emissions of smoke from the chimneys serving the Katec unit and the ovens fitted to the heat set web offset printing equipment referenced on the attached Figure 1 as S2 to S6 inclusive, shall not exceed Ringlemann Shade 1, which is smoke which, if compared in the appropriate manner with a Ringlemann chart as described in British Standard BS 2742 : 1969, would appear to be as dark as or darker than shade 1 on the chart.

3. All emissions into the air from the stacks referenced as S1 to S6 inclusive on the attached Figure 1 shall be colourless and free from persistent mist, other than steam or water vapour, free from droplets and free from persistent fume. There shall be no emissions of visible dust from the bag filter serving the paper baling equipment referenced as S1 on the attached Figure 1.

4. Dilution air shall not be admitted into the waste gases or process gases for the purpose of achieving an emission limit.

5. The use of odour masking agents and counteractants (other than as arrestment equipment additive permitted by a separate authorisation condition) is not permitted.

6. The concentration of volatile organic compounds in emissions into the air from the discharge point serving the Katec unit fitted to the three Baker Perkins heat set web offset printing presses and the Heidelberg Harris M850C web offset printing press referenced as S2 on the attached Figure 1, shall not exceed 50mg/m^3 expressed as total carbon excluding particulate matter averaged over a 15 minute period. This emission concentration shall be expressed at reference conditions of 273K and 101.3kPa and at maximum air flow of 265 Nm^3/minute. Measurements shall be made in accordance with condition 8 and 12 below. If on measurement, the air flow rate exceeds 265 Nm^3/minute, the emission concentration shall be calculated using the measured mass of pollutant and the maximum air flow rate of 265 Nm^3/minute. If on measurement, the air flow rate is less than 265Nm^3/minute, the emission concentration shall be calculated using the actual air flow.

7. The concentration of particulate matter in emissions into the air from the discharge point of the bag filter serving the compactor referenced as S1 on the attached Figure 1, shall not exceed 50mg/m^3. This emission concentration shall be expressed at reference conditions of 273K and 101.3kPa and at maximum air flow of 315Nm^3/minute. Measurements shall be made in accordance with condition 12 below. If on measurement, the air flow rate exceeds 315 Nm^3/minute, the emission concentration shall be calculated using the measured mass of pollutant and the maximum air flow rate of 315 Nm^3/minute. If on measurement, the air flow is less than 315 Nm^3/minute, the emission concentration shall be calculated using the actual measured air flow.

Monitoring, Sampling and Measurement of Emissions

8. Emissions of volatile organic compounds from the stack serving the Katec unit fitted to the ovens of the three Baker Perkins heat set web offset printing presses and the Heidelberg Harris M850C web offset printing press referenced as S2 on the attached Figure 1 shall be quantitatively monitored at least once in each 12 month period in accordance with the requirements of condition 13.

9. Emissions into the air from stacks referenced as S1 to S6 inclusive on the attached Figure 1, shall be visually observed over a period of 5 minutes at least twice in each day when the process is in operation in order to assess any visual emissions. Any emissions observed shall be recorded in the log book required to be kept in accordance with condition 11. The record shall include the location and nature of the emission and any investigation and remedial action undertaken.

10. An olfactory assessment of odours shall be carried out once per day at locations A, B, C and D located as indicated on the attached Figure 1. The results of these assessments shall be recorded in the log book required to be kept in accordance with condition 11, indicating the subjective strength and nature of any odour detected.

11. A log book shall be kept containing a record of all visual and olfactory assessments made in accordance with conditions 9 and 10. The record shall include the time and date of the assessment, the result, and the name of the person undertaking the assessment. The log book shall be kept available for inspection by an authorised Inspector of the Council on the premises occupied by the process and shall contain at least the previous 4 years records. In addition, any arrestment equipment, continuous monitoring or process malfunction or failure shall be recorded in this log book as well as the steps taken to deal with any such recorded incident.

12. The proposed test methods for measuring compliance with emission concentration limits shall be forwarded to the Council at least 21 days prior to commencement of sampling, and testing shall not be commenced until the Council approve the proposed test method in writing (this requirement shall not apply to continuous monitoring methods). Any tests carried out to measure compliance with emission concentration limits for particulate matter shall be carried out in accordance with the main procedural requirements of BS 3405 : 1983.

13. The results of all emission testing carried out in accordance with condition 12 above shall be notified to the Council in writing within 8 weeks of the completion of sampling.

14. An inventory of the amount of organic solvents used in the process, including cleaning solvents and the organic solvent content of inks and proprietary chemicals, shall be made, and this shall separately record organic solvent:

    a. used for cleaning purposes,
    b. present in the inks and coatings as supplied
    c. used in the viscosity adjustment of the inks or coatings in use or in preparation for use,
    d. the quantity of organic solvent recovered by the condensation process,
    e. the quantity of organic solvents removed from the site for recovery or disposal.

    A copy of the inventory for the preceding 6 months period shall be forwarded to the Council within 28 days of the end of the 6 month period to which the date relates. The requirements of this condition in respect of the need to forward a copy of the inventory to the Council shall not apply until 1 January 1994.

15. Condition Deleted.

<u>Materials Handling</u>

16. Spillages shall be cleared as soon as possible, and where the spilled materials are potentially odorous, the materials should be placed into a closed container. Where the spilled materials are finely divided and potentially dusty, cleaning shall be carried out using vacuum cleaning or wet methods.

17. All drummed raw materials shall be inspected for leakage on delivery and at least once per day. All drummed wastes shall be inspected for leakage at least once per day. Any leakage identified shall be dealt with immediately, and the actions taken recorded in the log book required by condition 11 above.

18. All potentially odorous waste materials, or waste materials containing organic solvents shall be stored in closed containers.

19. All drummed organic solvent storage areas shall be completely contained by impervious bunding or provided with spillage containment kerbs. The requirements of this condition shall not apply until 1 January 1994.

20. All potentially dusty materials and wastes which are stored outside the building shall be stored in covered or enclosed skips or containers. The requirements of this condition shall not apply until 1 January 1994.

Operational Controls

21. The ovens shall be provided with extract ventilation in order to minimise fugitive emissions from the process into the building.

22. The heat set web offset printing presses shall be enclosed in a booth in order to minimise fugitive emissions from the process into the building. The doors or points of access to these booths shall be kept closed other than during personnel access.

23. The supply of printing ink to the heat set web offset presses from the nominally 1 tonne tote storage containers to the printing machines shall be by the use of an enclosed system. All vessels where ink is held for delivery to the print units shall be lidded or enclosed.

24. All enclosures, arrestment equipment, pipe connections, valves and ductwork shall be leakproof if under negative pressure and gastight if under positive pressure. The requirements of this condition in respect of the printing enclosures shall not apply until 1 December 1996.

25. Emissions which are contained by extract ventilation from the heat set web offset printing press ovens shall be vented to the Katec Thermal Oxidation System.

26. Emissions from the end zones of the ovens shall be efficiently collected by the use of fugitive emission capture hoods provided with extract ventilation at the position where the paper exits the oven to minimise fugitive emissions from the process into the building.

27. Emissions produced at the chiller roller fitted to the heat set web offset printing presses shall be contained by the use of local exhaust ventilation. The contained emissions shall be discharged to the oven burners and used as combustion air. The efficiency of this process in respect of emission control shall be addressed in the upgrading programme required to be submitted in accordance with condition 1.

Arrestment Equipment

28. (i) The Katec Thermal Oxidation System shall be activated and brought to the correct oxidisation temperature of 750□C before the three Baker Perkins heat set web offset printing presses and the Heidelberg Harris M850C web offset printing press are started up.

(ii) The air stream in the system shall be maintained at a temperature of not less than 750□C for not less than 0.85 seconds as it passes through the system.

29. The oxidisation temperature of the Katec Thermal Oxidation System shall be continuously monitored. The monitor shall be fitted with an audible and visual alarm which shall activate if the temperature falls below 1020K (750□C). If the alarm activates, immediate actions shall be taken to identify the cause of the problem and to remedy the situation. All such incidents and the actions taken to rectify the situation shall be recorded in the log book required to be kept in accordance with condition 11.

30. The concentration of carbon monoxide emitted from the Katec Thermal Oxidation System shall be continuously monitored. The monitor shall be fitted with an audible and visual alarm which shall activate if the concentration of carbon monoxide emitted exceeds 100mg/m^3. If the alarm activates, immediate action shall be taken to identify the cause of the problem and to remedy the situation. All such incidents and the actions taken to rectify the situation shall be recorded in the log book required to be kept in accordance with condition 11.

31. The instruments used to continuously monitor the oxidation temperature and carbon monoxide emissions in accordance with conditions numbered 29 and 30 shall be checked daily and calibrated annually in accordance with the manufacturers instructions.

32. i) Subject to the exceptions detailed in condition 32 (ii) if the Katec Thermal Oxidiser serving the Baker Perkins G16, G14 and G12 colour unit heat set presses and the Heidelberg Harris M850c web offset printing press malfunctions or fails, or if the damper operates to allow emissions to bypass the thermal oxidiser, and the circumstances are such that resulting emissions are likely to exceed the emission concentration limits specified in condition 6 of this

authorisation, the operation of the printing presses shall be discontinued. The malfunction or failure of the oxidiser and the operation of the bypass damper to the oxidiser shall be notified to the Council in accordance with condition 41.

ii) The printing equipment detailed in condition 32(i) may be operated for:-

a) no more than 8 hours continuously and

b) no more than 96 hours cumulatively in any calendar year.

In exception to the requirements of condition 32(i) to discontinue process operation in the case of bypass of the thermal oxidiser or malfunction or failure of the thermal oxidisers.

33. The printing units of the Baker Perkins heat set web offset printing presses and the Heidelberg Harris M850Cweb offset printing press shall be interlocked to ensure that the printing units cannot be operated unless the Katec Thermal Oxidation System is operational.

34. Residues collected by particulate matter control equipment referenced as S1 on the attached Figure 1 shall be removed from the equipment on a regular basis.

35. Residues collected by particulate matter control equipment referenced as S1 on the attached Figure 1 shall be discharged into enclosed bags or containers. These containers shall be sealed on removal from the equipment and placed into a covered skip or covered container. The removal of the residue collection bags shall only be carried out when the equipment is not in use.

36. The bag filter serving the compactor shall be interlocked to the compactor and extract ventilation from the finishing operations from which it collects waste process air to ensure that in the event of particulate matter control equipment failure, the extraction serving the process operations and consequently the process operations are interrupted. All such failures shall be recorded in the log book required by condition 11 above along with the remedial steps taken. The requirements of this condition shall not apply until 1 July 1994.

Chimneys

37. The waste gases from the Katec Thermal Oxidation System referenced as S2 on the attached Figure 1 shall be discharged from a stack which is at least 11 metres above ground level.

38. Chimney flues and ductwork shall be inspected at least once every 6 months, and where the inspection reveals it necessary, the chimney flues and ductwork shall be cleaned. The ductwork shall be fitted with drainage valves where necessary to enable the removal of condensate which may build up within the ducts.

39. Chimneys and vents shall not be fitted with any restriction at the final opening, such as a plate, cap or cowl, although the chimney referred to in condition 37 may be fitted with an eductor cone.

40. Condition Deleted.

General Operations

41. If any breakdown occurs in the particulate matter or organic solvent control equipment, the Council shall be notified immediately. Any malfunction or breakdown leading to abnormal emissions into the air shall be dealt with immediately and the incident and the remedial actions taken recorded in the log book required to be kept in accordance with condition 11 above. A record shall be kept of the time and duration of any by-pass of air pollution control equipment or periods when the process is operated without the relevant air pollution control equipment in operation.

42. The Council shall be notified at least 28 days before any of the following changes are made to the process:-

a) any change to the capacity of the process, including storage capacity
b) any new or replacement printing presses or cleaning equipment
c) the installation of new or replacement equipment where this will increase the process capacity to above 120 tonnes of organic solvent use per annum or involve an increase or change in the nature of emissions into the air
d) any new or replacement air pollution control equipment
e) any change to the chimney or discharge point height, location or design
f) the installation of any continuous monitoring equipment for emission measurement
g) any change to the net rated thermal input or fuel used in the printing process ovens.

43. In relation to this authorisation, any reference to 'The Council' shall mean the Maldon District Council. In addition, any information required to be sent to the Council shall be sent to:-

Team Leader - Pollution Control
Maldon District Council
Princes Road
MALDON
Essex, CM9 5DL

.....(Signature)

Signed on 12 April 1996 by Mr J J Knight, Director of Community Services
Authorised by the Maldon District Council to sign on their behalf.

FIGURE 1 ATTACHED TO AUTHORISATION REFERENCE MLD7/1/93
RELATING TO E T HERON AND COMPANY LIMITED PRINTING PROCESS,
THE BENTALLS COMPLEX, COLCHESTER ROAD, HEYBRIDGE, MALDON