ENVIRONMENTAL PROTECTION AGENCY

BATNEEC GUIDANCE NOTE

Class 1.4

EXTRACTION OF PEAT

(DRAFT 3)

1. INTRODUCTION

This Guidance Note is one of a series issued by the Environmental Protection Agency and is designed to provide guidance to those applying for integrated pollution control licences under the EPA Act. It should also be read in conjunction with *Application Guidance Notes*, available under separate cover.

It should be noted at the outset, that noise is not included within the scope of this work and guidance on this parameter has been issued separately.

This Guidance Note is comprised of seven main sections and an appendix. Following this introduction, Section 2 contains a general note on the interpretation of BATNEEC. The industrial activity covered by the terms of this note is given in Section 3. In Section 4, the technologies to control emissions are tabulated and in Section 5 the specific emission limit values (ELVs) are given. Section 6 contains comments on compliance monitoring requirements.

The Appendix gives the main sources of emissions, and the principal releases from such sources.

All applicants for Integrated Pollution Control licences, in the sector covered by this note, should carefully examine the information laid down in this Guidance Note, and should use this information to assist in the making of a satisfactory application for an Integrated Pollution Control licence to the Agency. It should be clearly understood that achieving the emission limit values does not, by itself, meet the overall requirements in relation to IPC. In addition to meeting such values the applicant will also be required to demonstrate that waste minimisation is a priority objective and to put in place particular abatement measures to reduce overall mass emissions and pollutant load where this is necessary to protect the ambient environment.

The technologies and the associated emission limit values (ELVs) identified in this Guidance Note are, at the time of writing, regarded as representing BATNEEC for new activities. BATNEEC is not a static quality and will change as technologies, environmental factors and costs alter with the passage of time. The Agency may amend or update the guidance contained in this note should such amendments seem appropriate. The information contained in this Guidance Note is intended to be used only as a tool to assist in determining the BATNEEC for an operation in this sector and should not be taken to be a definitive authority on the BATNEEC for this sector**.** This Note should not be considered as a legal document**.**

2. INTERPRETATION OF BATNEEC

BATNEEC means '*the best available technology not entailing excessive costs'*. The technology in question should be **Best** at preventing pollution and **Available** in the sense that it is procurable by the industry concerned. **Technology** itself is taken as the techniques and the use of the techniques, including training and maintenance etc. **NEEC** addresses the balance between environmental benefit and financial expense.

The objective of the Best Available Technology Not Entailing Excessive Costs (BATNEEC) Guidelines is to provide a list of technologies which will be used by the EPA to determine BATNEEC for a scheduled activity. The BATNEEC identified in this Guidance Note is used as a basis for setting emission limit values. It is intended to update these guidelines as required in order to incorporate technological advances as they occur.

In the identification of BATNEEC, emphasis is placed on pollution prevention techniques, including cleaner technologies and waste minimisation, rather than end-of-pipe treatment.

Technologies identified in the BATNEEC guidelines are considered to be current best practice for the purposes of setting emission limit values. These technologies are representative of a wide range of currently employed technologies appropriate to particular circumstances. However, the guidance issued in this note in respect of the use of any technology, technique or standard does not preclude the use of any other similar technology, technique or standard which may achieve the same emission. The entire range would not necessarily be appropriate in specific cases. The specific choice depends on a wide range of circumstances but the crucial factor is that the selected regime achieves BATNEEC. In applying BATNEEC, Environmental Quality Objectives (EQOs) must be respected where set. Measures such as in-plant changes, raw material substitution, process recycling and improved material handling and storage practices, may also be employed to effect reductions in emissions. As well as providing for the installation of equipment and the operation of procedures for the reduction of possible emissions, BATNEEC will also necessitate the adoption of an on-going programme of environmental management and control, which will focus on continuing improvements aimed at prevention, elimination and/or progressive reduction of emissions.

As described in the EPA Act of 1992, BATNEEC will be used to prevent, eliminate or, where that is not practicable, limit, abate, or reduce an emission from an activity which is listed in the first schedule to the Act. The use of BATNEEC is construed in the Act to mean the provision and proper maintenance, operation, use and supervision of facilities which are the most suitable for the purposes.

In determining BATNEEC for an activity, regard shall be had to :

- the current state of technical knowledge;
- the requirements of environmental protection;

- the application of measures for these purposes, which do not entail excessive costs, having regard to the risk of significant environmental pollution which, in the opinion of the agency, exists.

For existing facilities, additional regard shall be had to :

- the nature, extent and effect of the emission concerned;

- the nature and age of the existing facilities connected with the activity and the period during which the facilities are likely to be used or to continue in operation, and

- the costs which would be incurred in improving or replacing these existing facilities in relation to the economic situation of activities of the class concerned.

The technologies and the associated emission limit values (ELVs) identified in this Guidance Note are regarded as representing BATNEEC for a *new* activity. However, it is also generally envisaged that *existing* facilities will progress towards attainment of similar emission limit values, but the specific ELV requirements and associated time frames will be identified on a case by case basis when the licence application is being processed. Furthermore, for *all* facilities, additional and more stringent requirements may be specified on a site-specific basis whenever environmental protection so requires. Hence the BATNEEC guidelines are not the sole basis on which licence emission limit values are to be set, since information from other sources will also be considered, including site-specific environmental and technical data, plant financial data and other relevant information.

3. SECTOR COVERED BY THIS GUIDANCE NOTE

This Guidance Note covers SECTOR 1.4 of the activities specified in the First Schedule to the EPA Act, 1992. These are:

1.4. The extraction of peat in the course of business which involves an area exceeding 50 hectares.

4. CONTROL TECHNOLOGIES

4.1 INTRODUCTION

As explained in Section 2, this Guidance Note identifies BATNEEC but obviously does so in the absence of site-specific information. Accordingly, it represents the requirements expected of any new activity covered by the Note, but does not exclude additional requirements which may form part of the granting of a licence for a specific site.

The approach to be used in selecting BATNEEC is based on the following hierarchy:

- Operation design / redesign changes to **eliminate** emissions and wastes that might pose environmental problems.

- Demonstration of waste **minimisation** by means of site extraction etc.

The existing or possible measures for reducing and controlling emissions are described in this section.

(i) Load minimisation
(ii) Containment
(iii) Recovery/recycle
(iv) Emission reduction
(v) Waste treatment and disposal.

The technical feasibility of the measures listed below has been demonstrated by various sources. Used singly or in combination, the measures represent BATNEEC solutions when implemented in the appropriate circumstances. The circumstances depend on site scale, nature of the raw material etc. A summary of the treatments for various emissions is given at the end of the section.

Note that where flammable/explosive vapours or dusts are handled, safety procedures (acceptable to HSA) should be adopted and nothing in this note should be construed as advice to the contrary.

4.2 TECHNOLOGIES FOR LOAD MINIMISATION

(No priority ranking is intended, and the appropriate selection in a particular case will depend on the specifics of the process concerned and on site constraints).

- Inventory control.
- Separation of contaminated and uncontaminated storm water run off in order to permit appropriate treatment options.
- Selection of extraction equipment and methodologies to minimise particulate emissions.
- Removal of extracted material as soon as feasible.
- Optimisation of extraction area to reduce dust blow off.

4.3. CONTAINMENT OF EMISSIONS

(No priority ranking is intended, and the appropriate selection in a particular case will depend on the specifics of the process concerned and on site constraints).

- Bunding of tanks.
- Minimisation of rain ingress, wind entrainment etc.
- Covered vehicles for offsite road transport.
- Collection of all contaminated water from extraction and storage areas.

4.4 TECHNOLOGIES FOR RECOVERY AND RECYCLE:

(No priority ranking is intended, and the appropriate selection in a particular case will depend on the specifics of the process concerned and on site constraints).

- Interceptor tanks.
- Recycle of interceptor/WWTP sludges to processing plant.

4.5 TECHNOLOGIES FOR TREATING AIR EMISSIONS:

(No priority ranking is intended, and the appropriate selection in a particular case will depend on the specifics of the process concerned and on site constraints).
(Symbols refer to table 4.1).

- Water spray suppression during dry windy weather where appropriate to prevent nuisance carryover (T1).

4.6 TECHNOLOGIES FOR TREATING WATER EMISSIONS

(No priority ranking is intended, and the appropriate selection in a particular case will depend on the specifics of the process concerned and on site constraints).
(Symbols refer to table 4.2).

4.6.1 Treatment

- Coagulation/flocculation (F1).
- Sedimentation/filtration/flotation (F2).

4.7 TECHNOLOGIES FOR THE TREATMENT AND DISPOSAL OF WASTES:

(No priority ranking is intended, and the appropriate selection in a particular case will depend on the specifics of the process concerned and on site constraints).

4.7.1 Sludge Treatment

- Gravity thickening.
- Drying.

4.7.2 Disposal

- Engineered landfill of wastes.
- Landspreading of wastes (as soil conditioner).
- Recycle of interceptor/WWTP sludges to processing plant.

Table 4.1 - Summary of Technologies for Treating Emissions to Air (Symbols refer to section 4.5)

Emission Type	Technology
Particulates	T1

Table 4.2 - Summary of Technologies for Treating Water Emissions (Symbols refer to Section 4.6)

Emission Type	Technology
Suspended Solids	F1, F2

5. EMISSION LIMIT VALUES

5.1 Releases to Water

All releases to waters are subject to a licence from the Agency. However, any discharge to a sewer will require the consent of the local authority or sewerage undertaker. BATNEEC to minimise the release of substances will generally include minimisation at source and either specific treatment of contaminated waste streams to remove particular substances or co-treatment of combined effluent streams or both. The Emission Limit Values for effluent discharges to waters are set out in Table 5.2.

5.2. Reference Conditions

The limit values for discharges to water are based on 24 hour flow proportional composite samples unless otherwise specified.

Table 5.2 - Emission Limit Values for Discharges to Water*

Constituent Group or Parameter	Limit Value	Notes
pH	6 - 9	-
BOD	25 mg/l	-
Suspended Solids	35 mg/l	-
Toxic Units	1	1
Total Nitrogen(as N)**	>80% Removal **or** 15 mg/l	3
Total Phosphorus (as P)**	>80% Removal **or** 2 mg/l	3
Fish Tainting	No Tainting	2

***** All values refer to daily averages, except where otherwise stated to the contrary, and except for pH which refers to continuous values. Values apply to effluent prior to dilution by uncontaminated streams e.g. stormwaters, cooling waters, etc.

****** Only applicable to waters subject to eutrophication. One or both limits may apply, depending on the sensitivity of the receiving water.

Notes for Table 5.2:

1. The toxicity of the effluent shall be determined on an appropriate aquatic species. The number of Toxicity Units (TU) = 100/96 hr LC50 in percentage vol/vol. so that higher TU values reflect greater levels of toxicity.

2. No substances shall be discharged in a manner which, or at a concentration which, following initial dilution, causes tainting of fish or shellfish, interferes with normal patterns of fish migration or which accumulates in sediments or biological tissues to the detriment of fish, wildlife or their predators.

3. Reduction in relation to influent load. Total nitrogen means the sum total of Kjeldahl-Nitrogen plus nitrate-nitrogen plus nitrite-nitrogen.

6. COMPLIANCE MONITORING

The methods proposed for monitoring the emissions from these sectors are set out below.

6.1 WASTE WATER DISCHARGES:

1. Establish existing conditions prior to start-up, of key emission constituents, and salient flora and fauna.

2. Daily monitoring of flow and volume, continuous monitoring of pH. Monitoring of other relevant parameters as deemed by the Agency taking account of the nature, magnitude and variability of the emission, and the reliability of the control technologies.

3. Monitoring of influent and effluent from the waste water treatment plant to establish an early warning of any difficulties in waste water treatment plant, or unusual loads.

4. The potential for the treated effluent to have tainting and toxic effects should be assessed and if necessary measured by established laboratory techniques.

6.2 SOLID WASTE MONITORING:

1. The recording in a register of the types, quantities, date and manner of disposal of all wastes.

APPENDIX 1

MAIN EMISSIONS

1 INTRODUCTION:

In this section, the major sources of emissions to air and water are identified, as are the principal sources of waste from the sector. It should be borne in mind that the identified list of sources is not all encompassing, nor will every plant falling within an individual sector have every one of the emissions which are associated with the sector as a whole.

Some of the emissions are considered to have little potential environmental significance and these are designated as minor (m). (However, obviously there could be specific sites where this designation of minor may not be correct. Such emissions must then be examined on a one-off basis).

2. SOURCES OF EMISSION TO AIR FROM: (SYMBOLS REFER TO TABLE A1)

- Fugitive emissions of particulate matter from extraction storage and loading (S1).

3. SOURCES OF EMISSIONS TO WATER FROM: (SYMBOLS REFER TO TABLE A2)

- Contaminated stormwaters (E1)
- Contaminated drainage water (E1)
- Fuel tank leaks (m)

4. SOURCES OF WASTE (SYMBOLS REFER TO TABLE A3)

- Sludges from WWTP (W1)

Table A1 - Summary of Sources and Emissions to Air
(Symbols refer to Section 2.2 of Appendix)

Source	Emissions
S1	Particulates

Table A2 - Summary of Sources and Emissions to Water
(Symbols refer to Section 3.2 of Appendix)

Sources	Emissions
E1	Suspended Particulates

Table A3 - Summary of Other Releases
(Symbols refer to Section 4 of Appendix)

Source	Emission
W1	Peat