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Administration,  
Waste Management Licensing,  
Environmental Protection Agency,  
PO Box 3000,  
Johnstown Castle Estate,  
Co. Wexford.

Environmental Protection Agency Waste Licensing Received 02 JUL 2002 Initials..... <i>eg</i> .....
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01<sup>st</sup> July 02

Dear Sir / Madam,

Following a visit by members of the Agency to Indaver waste management facilities in Belgium in May 2002, further information regarding the operations was requested.

The attached document has been prepared as a response to this request.

I trust that the attached is to your satisfaction, however should you require any additional information please do not hesitate to contact myself at this office.

Yours Sincerely,

*P.P.* *Laura Burke*

Laura Burke  
Projects Manager  
Indaver Ireland

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## Site Visit by the E.P.A. to Indaver Facilities, Belgium

The following information has been prepared as a response to questions raised by members of the Environmental Protection Agency during site visits to Indaver facilities in Belgium on 13<sup>th</sup> and 14<sup>th</sup> of May 2002.

### *Item 1. Waste Acceptance Procedures at the facilities.*

The procedure for accepting waste is divided into several different documents. Included in Appendix 1 is an overview of the acceptance procedures as taken from the Indaver Quality manual. This document incorporates both the Antwerp (Hazardous waste) and Beveren (Non-Hazardous waste) facilities and includes:

- A flow chart describing the sequence of steps taken to obtain and manage a contract for accepting waste.
- Overview of Goods/ Raw Materials purchasing procedures.
- Overview of incoming waste procedures.
- Overview of operating procedures for all processes on both sites.

Individual procedures mentioned in the above document can be made available by Indaver upon request.

### *Item 2. Classification of Boiler and Bottom Ashes*

Appendix 2 includes the European Waste Catalogue (2000/532/EC). This document classifies Boiler ash as hazardous or non – hazardous depending on the concentration of specific components i.e.

190115 = Boiler dust containing dangerous substances

190116 = Boiler dust other than those mentioned in 190115

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The specific substances described in article 2 of the EWC are for example:

- *One or more substances toxic for reproduction of category 3 classified as R62, R63 at a total concentration  $\geq 0.1\%$ .*

Lead compounds are regarded as toxic for reproduction. Because the concentration of lead in Fly and Boiler ash can be higher than 0.5%, Indaver considers those waste streams can be classified as hazardous or non hazardous depending on the lead content.

Indaver Ireland have stated in the Waste licence application for the Carranstown Waste Management facility that analysis (composition and leachate) will be carried out on all ashes and residues generated from the waste to energy process on an ongoing basis in order to correctly classify the nature of these streams.

Appendix 3 includes the original and translated version of a "Certificate of Use" issued by the OVAM authorities for Indaver's bottom ash. This document states the nature and composition of the ash, and also the conditions for its use.

### *Item 3 Operating licences*

The following translated Indaver operating licences are attached.

Appendix 4: Indaver – Beveren. (Grate Furnace lines 1 and 2)


Appendix 5: Indaver – Beveren (Grate Furnace line 3)

Appendix 6: Indaver – Beveren (Grate Furnace line 3 capacity + 50,000- tpa)

Appendix 7: Indaver – Antwerp (Rotary Kiln)

We trust the above is to your satisfaction, however should you require any additional information please contact us.

Regards

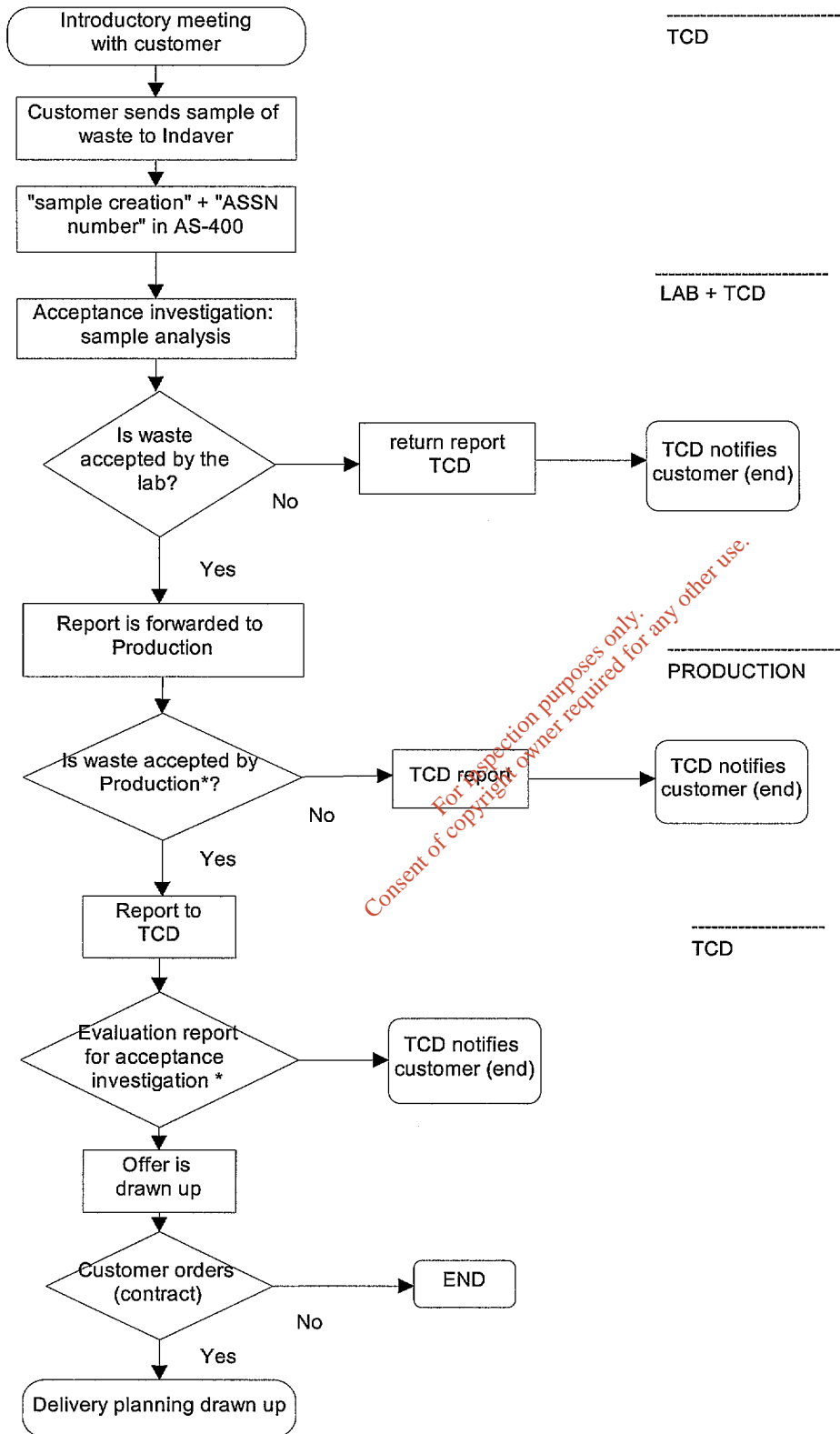
  
Robert Kelly  
Indaver Ireland

# Appendix 1

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# 1. Offer and contract

The sequence of steps to be taken to obtain and manage a contract is described in the following process flow :



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When defining the contractual requirements, we can distinguish five major phases:

1. Preparation phase by TCD.
2. Acceptance investigation by the lab :  
The lab will carry out different analyses on the sample of the waste received and decides whether and how it can be treated.
3. Acceptance by Production :  
After acceptance of the waste by the lab, the acceptance report is sent to the Production Department. They will decide whether they can treat the waste.  
*It is possible that the waste is not accepted by Production or TCD according to the conditions set forward in the AV, but only is accepted after a modification of the AV proposal (f.i. changing the process code). The departments which already have approved the report will in that case cancel their approval (in the reverse order). The report will then be adapted and needs to be approved by the different departments again.*
4. Acceptance of the waste by TCD :  
After the acceptance of the waste by the lab and Production, TCD will take the decision whether the waste will be treated by Indaver. Based on the information received, TCD will make an offer which will result in the corresponding contract.
5. Creating the delivery planning.

This process is controlled by means of the following procedures and instructions :

- TCD/P0X and TCD/I0X
- LAB/P01-P10

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## 2. OPERATIONAL PROCESS

### **INCOMING FLOWS**

#### **Goods and services**

##### ***Purchase of goods and services***

The procedure FAD/P01 "Purchase of goods and services" describes the method used at Indaver for the purchases of goods and services. Any necessary purchase information (incl. a reference to specific quality or environmental requirements) are written down unambiguously on the order form.

##### ***Verification of the purchased feedstock during delivery***

The verification of the materials purchased will be carried out on several levels.

First, there is a financial and administrative check upon reception of the delivery.

The delivery received is also checked on quality at the site in Antwerp. Finally, there are a number of specific production checks/

##### a) Financial and administrative check on reception:

The verification of the financial and administrative information of the delivery is described in FAD/P03 "Follow-up of delivery of raw materials, auxiliary materials and fuels".

This check includes:

- checking the quantity delivered
- checking the information stated on the delivery note provided by the supplier.

##### b) Quality check on reception (site Antwerp):

The method used here is described in detail in LAB/P24 "Checking the delivery of feedstock". This procedure describes for each raw material in which way the quality checks are carried out at the delivery lab. The registration of the reception checks is based on the delivery notes created by the Purchase Department. (see FAD/P01).

##### c) Production checks:

The checks carried out by Production are described in procedures and instructions:

##### ***Regular evaluation of suppliers of feedstock and services***

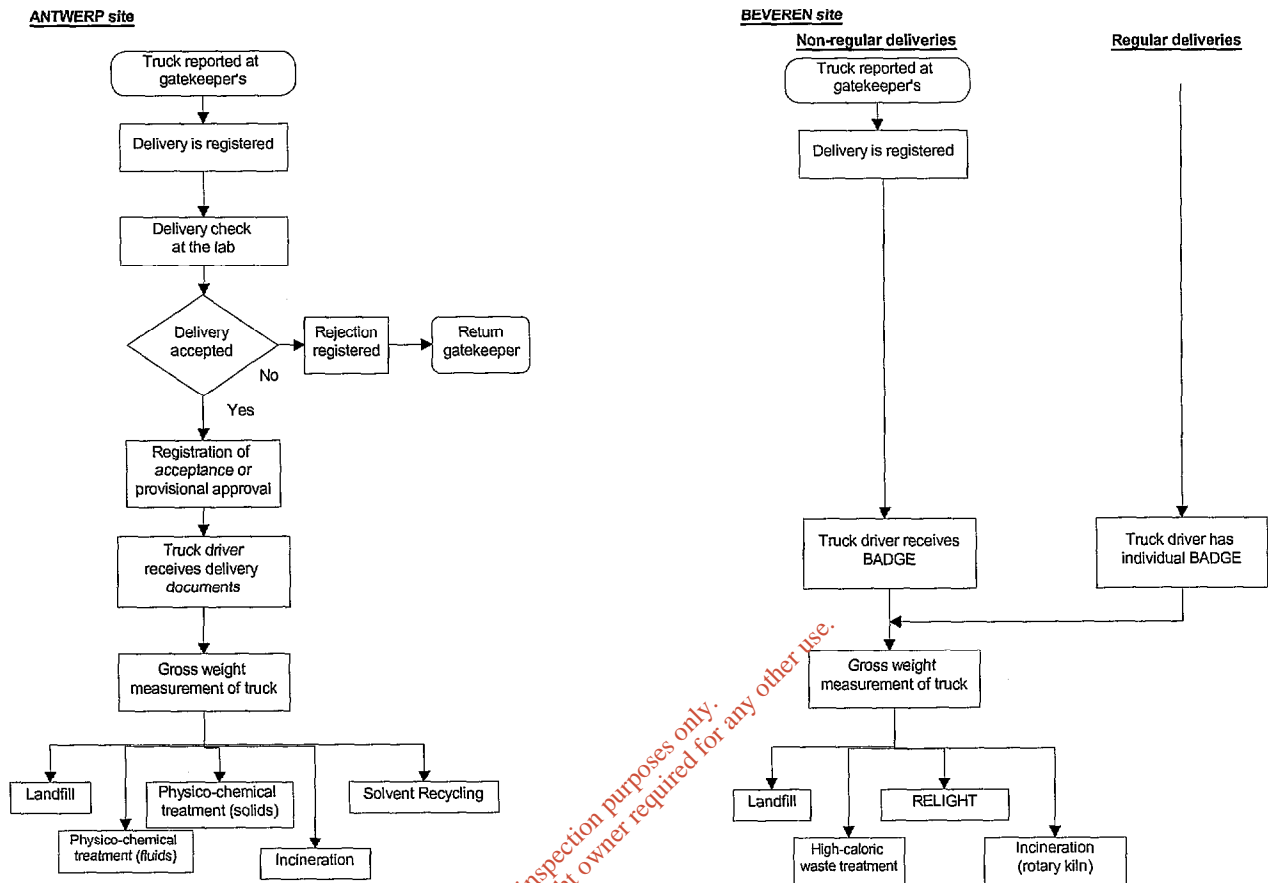
Before the first purchase, a thorough evaluation based on the offers is carried out. Different suppliers need to be evaluated before a final decision is taken (see FAD/P02 : "Calling for, acceptance and evaluation of offers"), after which these are registered on the list of accepted suppliers for purchasing.

During the period suppliers<sup>1</sup> keep delivering goods and services at Indaver's premises, they will remain subject to an evaluation system as described in the FAD/P06 procedure "Regular evaluation of suppliers of feedstock and services".

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<sup>1</sup>As of the evaluation year '96 (beginning of '97) suppliers of contractors are also included in this evaluation system.

## Incoming waste



As shown in the aforementioned flow chart, there is a difference between the delivery procedures of both sites. The delivery procedure in Antwerp is more stringent because this site is specialised in the treatment of hazardous waste.

### Registration of the truck

At the site in Antwerp, the truck driver will always report at the gatekeeper's office. He will check the delivery planning whether the delivery was expected and will register the delivery.

- TCD/P03 : "Delivery planning"
- TCD/P04 : "Non-conformities for delivery".
- FAD/P04 : "Delivery of waste + registration of deliveries at gatekeeper's office"

At the site in Beveren, only non-regular deliveries need to be reported at the gatekeeper's office.

Regular customers have an individual badge. Reporting and registration are registered automatically using this badge.



Delivery check by the lab (only at the site in Antwerp)

Before the truck is allowed to enter Indaver's premises, the cargo is checked to verify its conformity (based on the acceptance report).

- LAB/P15 : "Delivery check"
- LAB/P38 : "Internal batches".
- LAB/P16 : "Actions to be taken when assessing an anomaly during the delivery check"
- LAB/IA01 to and including LAB/IA61 : Analysis instructions
- ALG/P19 : "Process codes : definition, application and modification of a process code during delivery".

Gross weight measurement

site Antwerp:

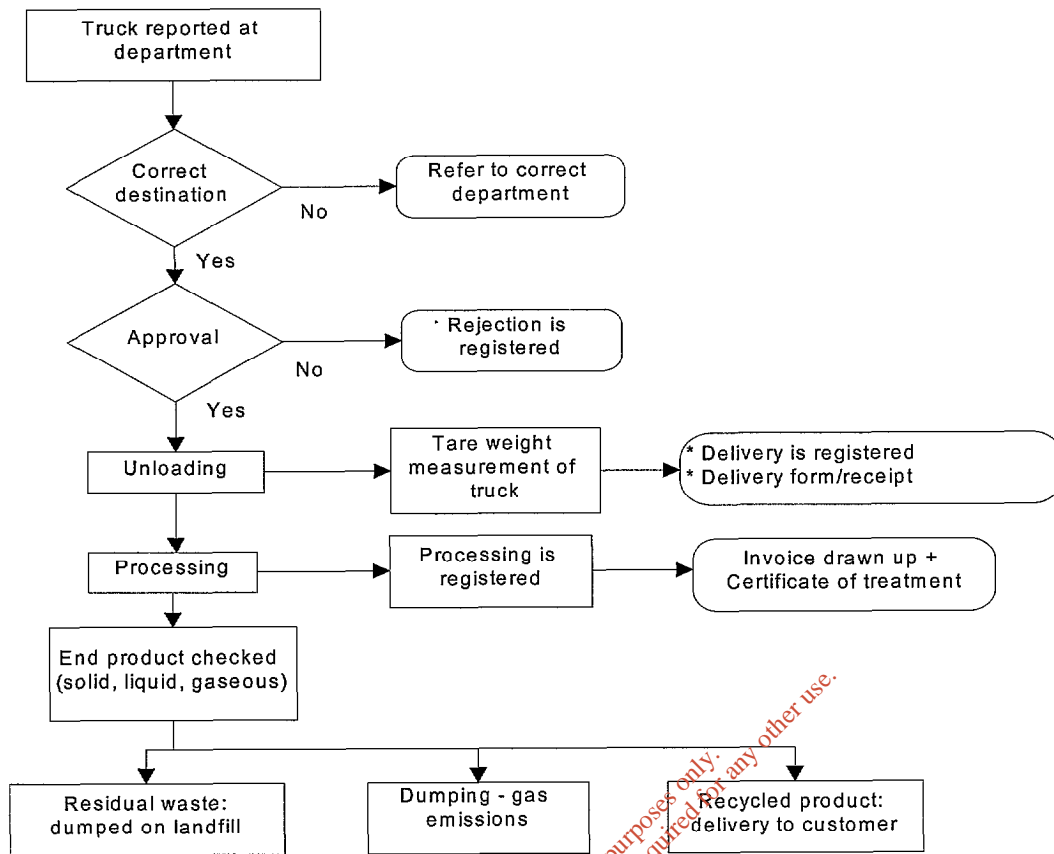
- After the acceptance of the delivery by the lab, the truck driver will receive a delivery note and access to the premises of Indaver is provided. The truck's gross weight is measured (see FAD/P04 : "Delivery of waste + registration of deliveries at gatekeeper's office").

site Beveren:

- The truck driver will receive a badge from the gatekeeper or already has a fixed individual badge. The gross weight of the truck can then be measured.

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## TREATMENT



### Landfill 1&2 (site Antwerp)

After measuring its gross weight, the truck is driven to the landfill. The necessary inspection is carried out by the Production Department and dumping can begin. If the delivery had been provisionally approved by the lab (for safety reasons), the final inspection will be carried out now.

After dumping, the truck's tare weight is assessed and it will leave the premises of Indaver.

Before the end of the working day, all dumps are registered in the dumping register.

The final check of the waste removal process using the landfill includes:

- a check of the measuring wells and the percolate.

### Procedures and instructions regarding the delivery and treatment of waste:

- DP/P01-06
- DP/I02-I06
- AWZ/P02-P03
- AWZ/I01-I07

### **Physico-chemistry 1 (site Antwerp)**

After measuring its gross weight, the truck is driven to FC1. The cargo is unloaded in the measuring wells and approved by the Production Department. The truck (after weighing its tare weight) will then leave the Indaver premises.

The delivery is recorded in the FC1 register.

After the cargo has been unloaded, treatment can start. The end products of this process are filtrate and filter cakes. The filtrate is treated further in the AWZ and the filter cakes are dumped on the landfill.

The physico-chemistry treatment and dumping on the landfill are registered in the AS400 system.

The final check of the waste treatment process based on physico-chemistry 1 includes :

- follow-up by the lab of the filter cakes and filtrate,
- final checks of the landfill (as described above).

#### Procedures and instructions regarding the delivery and treatment of waste:

- FC1/P01-P04
- FC1/I01-I02

### **Physico-chemistry 2 (site Antwerp)**

After measuring its gross weight, the truck is driven to FC2. The cargo is unloaded and approved by the Production Department. If the delivery had been provisionally approved, the final inspection will be carried out now. The truck (after weighing its tare weight) will then leave the Indaver premises. If empty containers are left behind, the empty containers return procedure will be applicable in this case.

The delivery is recorded in the FC2 register.

After the cargo has been unloaded, treatment can start according to the planning. The end product after treatment will be examined by the lab and the cargo can consequently be pumped onto the landfill.

The physico-chemistry treatment and dumping on the landfill are registered in the AS400 system.

The final check of the waste treatment process based on physico-chemistry 2 includes :

- follow-up by the lab of the end product on the landfill and
- final checks of the landfill (as described above).

#### Procedures and instructions regarding the delivery and treatment of waste:

- FC2/P01-P12
- FC2/I02-I12

### **Incineration rotary kilns and static incinerator (site Antwerp)**

After measuring its gross weight, the truck is driven to the acceptance department. The inspection of necessary documents is carried out by the Production Department (Acceptance) and unloading can

begin. If the delivery had been provisionally approved by the lab (for safety reasons), the final inspection will be carried out now.

After unloading, the truck's tare weight is assessed and it will leave the premises of Indaver. If empty containers are left behind, the empty containers return procedure will be applicable in this case.

Before the end of the working day, all deliveries are registered in the AS/400 system.

After the cargo has been unloaded, treatment can start.

Incineration will start according to the prescribed procedures and instructions (see below).

After the treatment, registration of the treatment and the destruction will be registered in the AS/400 system.

The final check of the waste treatment process in the static incinerator and the rotary kiln includes:

- lab and production checks of emissions,
- lab checks of effluent and solid residual products.

Procedures and instructions regarding the delivery and treatment of waste for VBR:

- ACC/P01-05
- ACC/I01-18
- 
- SO/P01-02
- SO/I01-27
- DTO2/P01-02
- DTO2/I01-49:

**1.1.1 . Solvent recycling (site Antwerp)**

After measuring its gross weight, the truck is driven to the solvent recycling unit. The inspection of necessary documents is carried out by the Production Department (Acceptance) and unloading can begin. After unloading, the truck's tare weight is assessed and it will leave the premises of Indaver.

Before the end of the working day, all deliveries are registered in the AS/400 system.

After the cargo has been unloaded, the recycling process of the solvents can begin. The recycled solvent is pumped in its liquid phase to the roadtanker.

The final check of the recycling process includes:

- lab and production checks.

Procedures and instructions regarding solvent recycling:

- SR/P01-03
- SR/I01-07

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### **1.1.2 . Incineration grate incinerators (site Beveren)**

After measuring its gross weight, the truck is driven to the dumping hall. By means of a badge and barrier all access is monitored and registered. After unloading, the truck's tare weight is assessed and it will leave the premises of Indaver.

Incineration will start according to the prescribed procedures and instructions (see below).

After the treatment, registration of the treatment and the destruction will be registered in the AS/400 system.

The final check of the waste treatment process includes:

- lab and production checks of emissions,
- lab checks of solid residual products.

#### Procedures and instructions regarding the delivery and treatment of waste for ROx:

- ROx/P01-08

### **1.1.3 . ROx/I01-62 Treatment of high-energy waste (VEA) (site Beveren)**

After measuring its gross weight, the truck is driven to the VEA hall. The cargo is unloaded and approved by the Production Department. The truck (after weighing its tare weight) will then leave the Indaver premises.

After the cargo has been unloaded, treatment can start according to the fixed planning.

The VEA end product (2 types) is transported to the cement and lime industry customers.

The quality of the end product is subject to a follow-up carried out by the lab.

#### Procedures and instructions regarding the delivery and treatment of waste:

- VEA/P01-06
- VEA/I01-11

### **1.1.4 . Indaver Relight (IR or IVKA) (site Beveren)**

After measuring its gross weight, the truck is driven to the Indaver Relight hall. The cargo is unloaded.

The truck (after weighing its tare weight) will then leave the Indaver premises.

After the cargo has been unloaded, treatment can start.

The end products of the END-CUT installation, glass and recyclable powder, will be returned to PHILIPS. The end products of the crushing mill are glass (to DTO) and metals (to scrap merchant).

The end products of the distillation unit are mercury (to SOLVAY for re-use), liquid residue (to DTO) and a residual fraction (to DP).

The final inspection of the treatment at Indaver Relight includes checks for air emissions.

#### Procedures and instructions regarding the delivery and treatment of waste:

- IR/P01-07
- IR/I01-12

### 1.1.5 . Landfill 3 (site Beveren)

*The landfill in Beveren is used for 99% for the company's own use (slag ROx). During the initial period, only a few external cargoes were accepted.*

After measuring its gross weight, the truck is driven to the landfill. By means of a badge and barrier all access is monitored and registered.

After dumping the cargo, the truck's tare weight is assessed. All dumping activities are recorded in the dumping register.

The final check of the waste removal process using the landfill includes:

- a check of the measuring wells and the percolate.

Procedures and instructions regarding the delivery and treatment of waste:

DP/P01-03

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# Appendix 2

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## II

(Acts whose publication is not obligatory)

## COMMISSION

## COMMISSION DECISION

of 3 May 2000

replacing Decision 94/3/EC establishing a list of wastes pursuant to Article 1(a) of Council Directive 75/442/EEC on waste and Council Decision 94/904/EC establishing a list of hazardous waste pursuant to Article 1(4) of Council Directive 91/689/EEC on hazardous waste

(notified under document number C(2000) 1147)

(Text with EEA relevance)

(2000/532/EC)

THE COMMISSION OF THE EUROPEAN COMMUNITIES,

Having regard to the Treaty establishing the European Community,

Having regard to Council Directive 75/442/EEC of 15 July 1975 on waste <sup>(1)</sup>, as amended by Directive 91/156/EEC <sup>(2)</sup>, and in particular Article 1(a) thereof,

Having regard to Council Directive 91/689/EEC of 12 December 1991 on hazardous waste <sup>(3)</sup>, and in particular Article 1(4), second indent thereof,

Whereas:

- (1) Several Member States have notified a number of waste categories which they consider to display one or more of the properties listed in Annex III to Directive 91/689/EEC.
- (2) Article 1(4) of Directive 91/689/EEC requires the Commission to examine notifications from Member States with a view to amending the list of hazardous wastes laid down in Council Decision 94/904/EC <sup>(4)</sup>.
- (3) Any waste inserted in the list of hazardous wastes must also be included in the European Waste Catalogue laid down in Commission Decision 94/3/EC <sup>(5)</sup>. It is appropriate, in order to increase the transparency of the listing

<sup>(1)</sup> OJ L 194, 25.7.1975, p. 47.

<sup>(2)</sup> OJ L 78, 26.3.1991, p. 32.

<sup>(3)</sup> OJ L 377, 31.12.1991, p. 20.

<sup>(4)</sup> OJ L 356, 31.12.1994, p. 14.

<sup>(5)</sup> OJ L 5, 7.1.1994, p. 15.

system and to simplify existing provisions, to establish one Community list which integrates the list of wastes laid down in Decision 94/3/EC and that of hazardous wastes laid down in Decision 94/904/EC.

- (4) The Commission is assisted in this task by the Committee established by Article 18 of Directive 75/442/EEC.
- (5) The measures laid down in this Decision are in accordance with the opinion expressed by the aforementioned Committee,

HAS ADOPTED THIS DECISION:

## Article 1

The list in the Annex to this Decision is adopted.

## Article 2

Wastes classified as hazardous are considered to display one or more of the properties listed in Annex III to Directive 91/689/EEC and, as regards H3 to H8, H10 <sup>(6)</sup> and H11 of that Annex, one or more of the following:

<sup>(6)</sup> In Council Directive 92/32/EEC (OJ L 154, 5.6.1992, p. 1.) amending for the seventh time Directive 67/548/EEC the term 'toxic for reproduction' was introduced. This replaced the term 'teratogenic' and has a more precise definition, without changing the concept. It is therefore the equivalent of H10 in Annex III to Directive 91/689/EEC.



- flash point  $\leq 55$  °C,
- one or more substances classified <sup>(1)</sup> as very toxic at a total concentration  $\geq 0,1$  %,
- one or more substances classified as toxic at a total concentration  $\geq 3$  %,
- one or more substances classified as harmful at a total concentration  $\geq 25$  %,
- one or more corrosive substances classified as R35 at a total concentration  $\geq 1$  %,
- one or more corrosive substances classified as R34 at a total concentration  $\geq 5$  %,
- one or more irritant substances classified as R41 at a total concentration  $\geq 10$  %,
- one or more irritant substances classified as R36, R37, R38 at a total concentration  $\geq 20$  %,
- one or more substances known to be carcinogenic of category 1 or 2 at a total concentration  $\geq 0,1$  %,
- one or more substances toxic for reproduction of category 1 or 2 classified as R60, R61 at a total concentration  $\geq 0,5$  %,
- one or more substances toxic for reproduction of category 3 classified as R62, R63 at a total concentration  $\geq 5$  %,
- one or more mutagenic substances of category 1 or 2 classified as R46 at a total concentration  $\geq 0,1$  %,
- one or more mutagenic substances of category 3 classified as R40 at a total concentration  $\geq 1$  %.

#### Article 3

Member States may decide, in exceptional cases, on the basis of documentary evidence provided in an appropriate way by the holder, that a specific waste indicated in the list as being

hazardous does not display any of the properties listed in Annex III to Directive 91/689/EEC. Without prejudice to Article 1(4), second indent, of Directive 91/689/EEC, Member States may decide, in exceptional cases, that a waste indicated in the list as being non-hazardous displays one or more of the properties listed in Annex III to Directive 91/689/EEC. All such decisions taken by Member States shall be communicated on a yearly basis to the Commission. The Commission shall collate these decisions and examine whether the Community list of wastes and hazardous wastes should be amended in the light of them.

#### Article 4

Member States shall take the measures necessary to comply with this Decision not later than 1 January 2002.

#### Article 5

Decision 94/3/EC and Decision 94/904/EC are repealed with effect from 1 January 2002.

#### Article 6

This Decision is addressed to the Member States.

Done at Brussels, 3 May 2000.

For the Commission

Margot WALLSTRÖM

Member of the Commission

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<sup>(1)</sup> The classification as well as the R numbers refer to Council Directive 67/548/EEC of 27 June 1967 on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances (OJ 196, 16.8.1967, p. 1.) and its subsequent amendments. The concentration limits refer to those laid down in Council Directive 88/379/EEC of 7 June 1988 on the approximation of the laws, regulations and administrative provisions of the Member States relating to the classification, packaging and labelling of dangerous preparations (OJ L 187, 16.7.1988, p. 14.) and its subsequent amendments.

## ANNEX

**List of wastes pursuant to Article 1(a) of Directive 75/442/EEC on waste and Article 1(4) of Directive 91/689/EEC on hazardous waste***Introduction*

1. The present list is a harmonised list of wastes. It will be periodically reviewed and if necessary revised in accordance with Article 18 of Directive 75/442/EEC. However, the inclusion of a material in the list does not mean that the material is a waste in all circumstances. Materials are considered to be waste only where the definition of waste in Article 1(a) of Directive 75/442/EEC is met.
2. Wastes included in the list are subject to the provisions of Directive 75/442/EEC except where Article 2(1)(b) of this Directive applies.
3. The different types of waste in the list are fully defined by the six-digit code for the waste and the respective two-digit and four-digit chapter headings. This implies that the following steps should be taken to identify a waste in the list.
  - 3.1. Identify the source generating the waste in Chapters 01 to 12 or 17 to 20 and identify the appropriate six-digit code of the waste (excluding codes ending with 99 of these chapters). Note that a specific production unit may need to classify its activities in several chapters. For instance, a car manufacturer may find its wastes listed in Chapters 12 (wastes from shaping and surface treatment of metals), 11 (inorganic wastes containing metals from metal treatment and the coating of metals) and 08 (wastes from the use of coatings), depending on the different process steps.
  - 3.2. If no appropriate waste code can be found in Chapters 01 to 12 or 17 to 20 the Chapters 13, 14 and 15 must be examined to identify the waste.
  - 3.3. If none of these waste codes apply, the waste must be identified according to Chapter 16.
  - 3.4. If the waste is not in Chapter 16 either, the 99 code (wastes not otherwise specified) must be used in the section of the list corresponding to the activity identified in step one.
4. Any waste marked with an asterisk (\*) is considered as a hazardous waste pursuant to Article 1(4), first indent, of Directive 91/689/EEC on hazardous waste, and subject to the provisions of that Directive unless Article 1(5) of that Directive applies.
5. For the purpose of this Decision, 'dangerous substance' means any substance that has been or will be classified as dangerous in Directive 67/548/EEC as amended; 'heavy metal' means any compound of antimony, arsenic, cadmium, chromium (VI), copper, lead, mercury, nickel, selenium, tellurium, thallium and tin, including these metals in metallic form, as far as these are classified as dangerous substances.
6. If a waste is identified as hazardous by a specific or general reference to dangerous substances, the waste is hazardous only if the concentrations of those substances are such (i.e. percentage by weight) that the waste presents one or more of the properties listed in Annex III to Council Directive 91/689/EEC. As regards H3 to H8, H10 and H11, Article 2 of this Decision applies. For the characteristics H1, H2, H9 and H12 to H14 Article 2 of the present Decision does not provide specifications at present.
7. The following rules for numbering of the items in the list have been used: For those wastes that were not changed the code numbers from Decision 94/3/EC have been used; The codes for waste that were changed have been deleted and remain unused in order to avoid confusion after implementation of the new list; Wastes added have been given a code that was not used in Decision 94/3/EC.

## INDEX

## Chapters of the list

*Two-digit*

- 01 Wastes resulting from exploration, mining, dressing and further treatment of minerals and quarry
- 02 Wastes from agricultural, horticultural, hunting, fishing and aquacultural primary production, food preparation and processing
- 03 Wastes from wood processing and the production of paper, cardboard, pulp, panels and furniture
- 04 Wastes from the leather, fur and textile industries
- 05 Wastes from petroleum refining, natural gas purification and pyrolytic treatment of coal
- 06 Wastes from inorganic chemical processes
- 07 Wastes from organic chemical processes
- 08 Wastes from the manufacture, formulation, supply and use (MFSU) of coatings (paints, varnishes and vitreous enamels), adhesives, sealants and printing inks
- 09 Wastes from the photographic industry
- 10 Inorganic wastes from thermal processes
- 11 Inorganic metal-containing wastes from metal treatment and the coating of metals, and non-ferrous hydrometallurgy
- 12 Wastes from shaping and surface treatment of metals and plastics
- 13 Oil wastes (except edible oils, 05 and 12)
- 14 Wastes from organic substances used as solvents (except 07 and 08)
- 15 Waste packaging: absorbents, wiping cloths, filter materials and protective clothing not otherwise specified
- 16 Wastes not otherwise specified in the list
- 17 Construction and demolition wastes (including road construction)
- 18 Wastes from human or animal health care and/or related research (except kitchen and restaurant wastes not arising from immediate health care)
- 19 Wastes from waste treatment facilities, off-site waste water treatment plants and the water industry
- 20 Municipal wastes and similar commercial, industrial and institutional wastes including separately collected fractions

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- 01 WASTES RESULTING FROM EXPLORATION, MINING, DRESSING AND FURTHER TREATMENT OF MINERALS AND QUARRY**
- 01 01 Wastes from mineral excavation**
- 01 01 01 Waste from mineral metalliferous excavation
- 01 01 02 Waste from mineral non-metalliferous excavation
- 01 02 Wastes from mineral dressing**
- 01 02 01 Wastes from the dressing of metalliferous minerals
- 01 02 02 Wastes from the dressing on non-metalliferous minerals
- 01 03 Wastes from further physical and chemical processing of metalliferous minerals**
- 01 03 01 Tailings
- 01 03 02 Dusty and powdery waste
- 01 03 03 Red mud from alumina production
- 01 03 99 Wastes not otherwise specified
- 01 04 Wastes from further physical and chemical processing on non-metalliferous minerals**
- 01 04 01 Waste gravel and crushed rocks
- 01 04 02 Waste sand and clays
- 01 04 03 Dusy and powdery waste
- 01 04 04 Waste from potash and rock-salt processing
- 01 04 05 Waste from washing and cleaning of minerals
- 01 04 06 Waste from stone cutting and sawing
- 01 04 99 Waste not otherwise specified
- 01 05 Drilling muds and other drilling wastes**
- 01 05 01 Oil-containing drilling muds and wastes
- 01 05 02 Barite-containing drilling muds and wastes
- 01 05 03 Chloride-containing drilling muds and wastes
- 01 05 04 Fresh-water drilling muds and wastes
- 01 05 99 Wastes not otherwise specified
- 02 WASTES FROM AGRICULTURAL, HORTICULTURAL, HUNTING, FISHING AND AQUACULTURAL PRIMARY PRODUCTION, FOOD PREPARATION AND PROCESSING**
- 02 01 Primary production wastes**
- 02 01 01 Sludges from washing and cleaning
- 02 01 02 Animal tissue waste
- 02 01 03 Plant tissue waste
- 02 01 04 Waste plastics (except packaging)
- 02 01 05\* Agrochemical wastes
- 02 01 06 Animal faeces, urine and manure (including spoiled straw), effluent, collected separately and treated off-site
- 02 01 07 Waste from forestry exploitation
- 02 01 99 Waste not otherwise specified
- 02 02 Wastes from the preparation and processing of meat, fish and other foods of animal origin**
- 02 02 01 Sludges from washing and cleaning
- 02 02 02 Animal tissue waste
- 02 02 03 Material unsuitable for consumption or processing
- 02 02 04 Sludges from on-site effluent treatment
- 02 02 99 Waste not otherwise specified
- 02 03 Wastes from fruit, vegetables, cereals, edible oils, cocoa, coffee and tobacco preparation and processing; tobacco processing; conserve production**
- 02 03 01 Sludges from washing, cleaning, peeling, centrifuging and separation
- 02 03 02 Waste from preserving agents
- 02 03 03 Waste from solvent extraction

- 02 03 04 Materials unsuitable for consumption or processing
- 02 03 05 Sludges from on-site effluent treatment
- 02 03 99 Wastes not otherwise specified
- 02 04 Wastes from sugar processing**
- 02 04 01 Soil from cleaning and washing beet
- 02 04 02 Off-specification calcium carbonate
- 02 04 03 Sludges from on-site effluent treatment
- 02 04 99 Wastes not otherwise specified
- 02 05 Wastes from the dairy products industry**
- 02 05 01 Materials unsuitable for consumption or processing
- 02 05 02 Sludges from on-site effluent treatment
- 02 05 99 Wastes not otherwise specified
- 02 06 Wastes from the baking and confectionery industry**
- 02 06 01 Materials unsuitable for consumption or processing
- 02 06 02 Wastes from preserving agents
- 02 06 03 Sludges from on-site effluent treatment
- 02 06 99 Wastes not otherwise specified
- 02 07 Wastes from the production of alcoholic and non-alcoholic beverages (except coffee, tea and cocoa)**
- 02 07 01 Waste from washing, cleaning and mechanical reduction of raw materials
- 02 07 02 Waste from spirits distillation
- 02 07 03 Waste from chemical treatment
- 02 07 04 Materials unsuitable for consumption or processing
- 02 07 05 Sludges from on-site effluent treatment
- 02 07 99 Wastes not otherwise specified
- 03 WASTES FROM WOOD PROCESSING AND THE PRODUCTION OF PAPER, CARDBOARD, PULP, PANELS AND FURNITURE**
- 03 01 Wastes from wood processing and the production of panels and furniture**
- 03 01 01 Waste bark and cork
- 03 01 02 Sawdust
- 03 01 03 Shaving, cuttings, spoiled timber/particle board/veneer
- 03 01 99 Wastes not otherwise specified
- 03 02 Wood preservation wastes**
- 03 02 01\* Non-halogenated organic wood preservatives
- 03 02 02\* Organochlorinated wood preservatives
- 03 02 03\* Organometallic wood preservatives
- 03 02 04\* Inorganic wood preservatives
- 03 03 Wastes from pulp, paper and cardboard production and processing**
- 03 03 01 Bark
- 03 03 02 Dregs and green liquor sludges (from black liquor treatment)
- 03 03 03 Bleaching sludges from hypochlorite and chlorine processes
- 03 03 04 Bleaching sludges from other bleaching processes
- 03 03 05 De-inking sludges from paper recycling
- 03 03 06 Fibre and paper sludge
- 03 03 07 Rejects from paper and cardboard recycling
- 03 03 99 Wastes not otherwise specified

- 04 WASTES FROM THE LEATHER, FUR AND TEXTILE INDUSTRIES**
- 04 01 Wastes from the leather and fur industry**
- 04 01 01 Fleshings and lime split waste
- 04 01 02 Liming waste
- 04 01 03\* Degreasing waste containing solvents without a liquid phase
- 04 01 04 Tanning liquor containing chromium
- 04 01 05 Tanning liquor free of chromium
- 04 01 06 Sludges, in particular from on-site, effluent treatment containing chromium
- 04 01 07 Sludges, in particular from on-site effluent treatment free of chromium
- 04 01 08 Waste tanned leather (blue sheetings, shavings, cuttings, buffing dust) containing chromium
- 04 01 09 Waste from dressing and finishing
- 04 01 99 Waste not otherwise specified
- 04 02 Wastes from the textile industry**
- 04 02 01 Waste from unprocessed textile fibres and other natural fibrous substances mainly of vegetable origin
- 04 02 02 Waste from unprocessed textile fibres mainly of animal origin
- 04 02 03 Waste from unprocessed textile fibres mainly of artificial or synthetic origin
- 04 02 04 Waste from unprocessed mixed textile fibres before spinning and weaving
- 04 02 05 Waste from processed textile fibres mainly of vegetable origin
- 04 02 06 Waste from processed textile fibres mainly of animal origin
- 04 02 07 Waste from processed fibres mainly of artificial or synthetic origin
- 04 02 08 Waste from processed mixed textile fibres
- 04 02 09 Waste from composite materials (impregnated textile, elastomer, plastomer)
- 04 02 10 Organic matter from natural products (e.g. grease, wax)
- 04 02 14\* Waste from finishing containing organic solvents
- 04 02 15 Waste from finishing other than mentioned in 04 02 14
- 04 02 16\* Dyestuffs and pigments containing dangerous substances
- 04 02 17 Dyestuffs and pigments other than those mentioned in 04 02 16
- 04 02 19\* Sludges from on-site effluent treatment containing dangerous substances
- 04 02 20 Sludges from on-site effluent treatment other than mentioned in 04 02 19
- 04 02 99 Wastes not otherwise specified
- 05 WASTES FROM PETROLEUM REFINING, NATURAL GAS PURIFICATION AND PYROLYTIC TREATMENT OF COAL**
- 05 01 Oily sludges and solid wastes**
- 05 01 02 Desalter sludges
- 05 01 03\* Tank bottom sludges
- 05 01 04\* Acid alkyl sludges
- 05 01 05\* Oil spills
- 05 01 06 Sludges from plant, equipment and maintenance operations
- 05 01 07\* Acid tars
- 05 01 08\* Other tars
- 05 01 09\* Sludges from on-site effluent treatment containing dangerous substances
- 05 01 10 Sludges from on-site effluent treatment other than those mentioned in 05 01 09
- 05 01 99 Wastes not otherwise specified
- 05 02 Non oily sludges and solid wastes**
- 05 02 01 Boiler feedwater sludges
- 05 02 02 Waste from cooling columns
- 05 02 99 Wastes not otherwise specified

- 05 04 Spent filter clays**  
05 04 01\* Spent filter clays
- 05 05 Oil desulphurisation wastes**  
05 05 01 Waste containing sulphur  
05 05 99 Wastes not otherwise specified
- 05 06 Wastes from the pyrolytic treatment of coal**  
05 06 01\* Acid tars  
05 06 02 Asphalt  
05 06 03\* Other tars  
05 06 04 Waste from cooling columns  
05 06 99 Wastes not otherwise specified
- 05 07 Wastes from natural gas purification**  
05 07 01\* Sludges containing mercury  
05 07 02 Waste containing sulphur  
05 07 99 Wastes not otherwise specified
- 05 08 Wastes from oil regeneration**  
05 08 01\* Spent filter clays  
05 08 02\* Acid tars  
05 08 03\* Other tars  
05 08 04\* Aqueous liquid waste from oil regeneration  
05 08 99 Wastes not otherwise specified
- 06 WASTES FROM INORGANIC CHEMICAL PROCESSES**
- 06 01 Waste acidic solutions**  
06 01 01\* Sulphuric acid and sulphurous acid  
06 01 02\* Hydrochloric acid  
06 01 03\* Hydrofluoric acid  
06 01 04\* Phosphoric and phosphorous acid  
06 01 05\* Nitric acid and nitrous acid  
06 01 99\* Wastes not otherwise specified
- 06 02 Waste alkaline solutions**  
06 02 01\* Calcium hydroxide  
06 02 02\* Soda  
06 02 03\* Ammonia  
06 02 99\* Waste salts and their solutions
- 06 03 Waste salts and their solutions**  
06 03 01 Carbonates (except 02 04 02)  
06 03 02 Saline solutions containing sulphates, sulphites or sulphides  
06 03 03 Solid salts containing sulphates, sulphites or sulphides  
06 03 04 Saline solutions containing chlorides, fluorides and halides  
06 03 05 Solid salts containing chlorides, fluorides and other halogenated solid salts  
06 03 06 Saline solutions containing phosphates and related solid salts  
06 03 07 Phosphates and related solid salts  
06 03 08 Saline solutions containing nitrates and related compounds  
06 03 09 Solid salts containing nitrides (nitrometallic)  
06 03 10 Solid salts containing ammonium  
06 03 11\* Salts and solutions containing cyanides  
06 03 12 Salts and solutions containing organic compounds  
06 03 99 Wastes not otherwise specified

- 06 04 Metal-containing wastes**
- 06 04 01 Metallic oxides
  - 06 04 02\* Metallic salts (except 06 03)
  - 06 04 03\* Waste containing arsenic
  - 06 04 04\* Waste containing mercury
  - 06 04 05\* Waste containing other heavy metals
  - 06 04 99 Wastes not otherwise specified
- 06 05 Sludges from on-site effluent treatment**
- 06 05 02\* Sludges from on-site effluent treatment containing dangerous substances
  - 06 05 03 Sludges from on-site effluent treatment other than those mentioned in 06 05 02
- 06 06 Wastes from sulphur chemical processes (production and transformation) and desulphurisation processes**
- 06 06 01 Waste containing sulphur
  - 06 06 99 Wastes not otherwise specified
- 06 07 Wastes from halogen chemical processes**
- 06 07 01\* Waste containing asbestos from electrolysis
  - 06 07 02\* Activated carbon from chlorine production
  - 06 07 99 Wastes not otherwise specified
- 06 08 Waste from production of silicon and silicon derivatives**
- 06 08 01 Waste from production of silicon and silicon derivatives
- 06 09 Wastes from phosphorus chemical processes**
- 06 09 01 Phosphogypsum
  - 06 09 02 Phosphorous slag
  - 06 09 99 Wastes not otherwise specified
- 06 10 Waste from nitrogen chemical processes and fertiliser manufacture**
- 06 10 01 Waste from nitrogen chemical processes and fertiliser manufacture
- 06 11 Waste from the manufacture of inorganic pigments and opacifiers**
- 06 11 01 Gypsum from titanium dioxide production
  - 06 11 99 Wastes not otherwise specified
- 06 13 Wastes from other inorganic chemical processes**
- 06 13 01\* Inorganic pesticides, biocides and wood preserving agents
  - 06 13 02\* Spent activated carbon (except 06 07 02)
  - 06 13 03 Carbon black
  - 06 13 04\* Waste from asbestos processing
  - 06 13 99 Wastes not otherwise specified
- 07 WASTES FROM ORGANIC CHEMICAL PROCESSES**
- 07 01 Wastes from the manufacture, formulation, supply and use (MFSU) of basic organic chemicals**
- 07 01 01\* Aqueous washing liquids and mother liquors
  - 07 01 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 01 04\* Other organic solvents, washing liquids and mother liquors
  - 07 01 07\* Halogenated still bottoms and reaction residues
  - 07 01 08\* Other still bottoms and reaction residues
  - 07 01 09\* Halogenated filter cakes, spent absorbents
  - 07 01 10\* Other filter cakes, spent absorbents
  - 07 01 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 01 12 Sludges from on-site effluent treatment other than those mentioned in 07 01 11
  - 07 01 99 Wastes not otherwise specified



- 07 02 Wastes from the MFSU of plastics, synthetic rubber and man-made fibres**
- 07 02 01\* Aqueous washing liquids and mother liquors
  - 07 02 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 02 04\* Other organic solvents, washing liquids and mother liquors
  - 07 02 07\* Halogenated still bottoms and reaction residues
  - 07 02 08\* Other still bottoms and reaction residues
  - 07 02 09\* Halogenated filter cakes, spent absorbents
  - 07 02 10\* Other filter cakes, spent absorbents
  - 07 02 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 02 12 Sludges from on-site effluent treatment other than those mentioned in 07 02 11
  - 07 02 13 Waste plastic
  - 07 02 99 Wastes not otherwise specified
- 07 03 Wastes from the MFSU of organic dyes and pigments (except 06 11)**
- 07 03 01\* Aqueous washing liquids and mother liquors
  - 07 03 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 03 04\* Other organic solvents, washing liquids and mother liquors
  - 07 03 07\* Halogenated still bottoms and reaction residues
  - 07 03 08\* Other still bottoms and reaction residues
  - 07 03 09\* Halogenated filter cakes, spent absorbents
  - 07 03 10\* Other filter cakes, spent absorbents
  - 07 03 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 03 12 Sludges from on-site effluent treatment other than those mentioned in 07 03 11
  - 07 03 99 Wastes not otherwise specified
- 07 04 Wastes from the MFSU of organic pesticides (except 02 01 05)**
- 07 04 01\* Aqueous washing liquids and mother liquors
  - 07 04 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 04 04\* Other organic solvents, washing liquids and mother liquors
  - 07 04 07\* Halogenated still bottoms and reaction residues
  - 07 04 08\* Other still bottoms and reaction residues
  - 07 04 09\* Halogenated filter cakes, spent absorbents
  - 07 04 10\* Other filter cakes, spent absorbents
  - 07 04 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 04 12 Sludges from on-site effluent treatment other than those mentioned in 07 04 11
  - 07 04 99 Wastes not otherwise specified
- 07 05 Wastes from the MFSU of pharmaceuticals**
- 07 05 01\* Aqueous washing liquids and mother liquors
  - 07 05 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 05 04\* Other organic solvents, washing liquids and mother liquors
  - 07 05 07\* Halogenated still bottoms and reaction residues
  - 07 05 08\* Other still bottoms and reaction residues
  - 07 05 09\* Halogenated filter cakes, spent absorbents
  - 07 05 10\* Other filter cakes, spent absorbents
  - 07 05 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 05 12 Sludges from on-site effluent treatment other than those mentioned in 07 05 11
  - 07 05 99 Wastes not otherwise specified

- 07 06 Wastes from the MFSU of fats, grease, soaps, detergents disinfectants and cosmetics**
- 07 06 01\* Aqueous washing liquids and mother liquors
  - 07 06 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 06 04\* Other organic solvents, washing liquids and mother liquors
  - 07 06 07\* Halogenated still bottoms and reaction residues
  - 07 06 08\* Other still bottoms and reaction residues
  - 07 06 09\* Halogenated filter cakes, spent absorbents
  - 07 06 10\* Other filter cakes, spent absorbents
  - 07 06 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 06 12 Sludges from on-site effluent treatment other than those mentioned in 07 06 11
  - 07 06 99 Wastes not otherwise specified
- 07 07 Wastes from the MFSU of fine chemicals and chemical products not otherwise specified**
- 07 07 01\* Aqueous washing liquids and mother liquors
  - 07 07 03\* Organic halogenated solvents, washing liquids and mother liquors
  - 07 07 04\* Other organic solvents, washing liquids and mother liquors
  - 07 07 07\* Halogenated still bottoms and reaction residues
  - 07 07 08\* Other still bottoms and reaction residues
  - 07 07 09\* Halogenated filter cakes, spent absorbents
  - 07 07 10\* Other filter cakes, spent absorbents
  - 07 07 11\* Sludges from on-site effluent treatment containing dangerous substances
  - 07 07 12 Sludges from on-site effluent treatment other than those mentioned in 07 07 11
  - 07 07 99 Wastes not otherwise specified
- 08 WASTES FROM THE MANUFACTURE, FORMULATION, SUPPLY AND USE (MFSU) OF COATINGS (PAINTS, VARNISHES AND VITREOUS ENAMELS), ADHESIVES, SEALANTS AND PRINTING INKS**
- 08 01 Wastes from MFSU and removal of paint and varnish**
- 08 01 11\* Waste paint and varnish containing organic solvents or other dangerous substances
  - 08 01 12 Waste paint and varnish other than those mentioned in 08 01 11
  - 08 01 13\* Sludges from paint or varnish containing organic solvents or other dangerous substances
  - 08 01 14 Sludges from paint or varnish other than those mentioned in 08 01 13
  - 08 01 15\* Aqueous sludges containing paint or varnish containing organic solvents or other dangerous substances
  - 08 01 16
  - 08 01 17\* Aqueous sludges containing paint or varnish other than those mentioned in 08 01 15
  - 08 01 18 Waste from paint or varnish removal other than those mentioned in 08 01 17
  - 08 01 19\* Aqueous suspensions containing paint or varnish containing organic solvents or other dangerous substances
  - 08 01 20 Aqueous suspensions containing paint or varnish other than those mentioned in 08 01 19
  - 08 01 21\* Waste paint or varnish remover
  - 08 01 99 Wastes not otherwise specified
- 08 02 Wastes from MFSU of other coatings (including ceramic materials)**
- 08 02 01 Waste coating powders
  - 08 02 02 Aqueous sludges containing ceramic materials
  - 08 02 03 Aqueous suspensions containing ceramic materials
  - 08 02 99 Wastes not otherwise specified
- 08 03 Wastes from MFSU of printing inks**
- 08 03 01\* Waste ink containing halogenated solvents
  - 08 03 02\* Waste ink containing non-halogenated solvents
  - 08 03 03 Waste from water-based ink
  - 08 03 04 Dried ink

- 08 03 05\* Ink sludges containing halogenated solvents  
08 03 06\* Ink sludges containing non-halogenated solvents  
08 03 07 Aqueous sludges containing ink  
08 03 08 Aqueous liquid waste containing ink  
08 03 09 Waste printing toner (including cartridges)  
08 03 10\* Waste organic solvents used for cleaning  
08 03 11\* Waste etching solutions  
08 03 99 Wastes not otherwise specified
- 08 04 Wastes from MFSU of adhesives and sealants (including waterproofing products)**  
08 04 09\* Waste adhesives and sealants containing organic solvents or other dangerous substances  
08 04 10  
08 04 11\* Adhesive and sealant sludges containing organic solvents or other dangerous substances  
08 04 12 Adhesive and sealant sludges other than those mentioned in 08 04 11  
08 04 13\* Aqueous sludges containing adhesives or sealants containing organic solvents or other dangerous substances  
08 04 14 Aqueous sludges containing adhesives or sealants other than those mentioned in 08 04 13  
08 04 15\* Aqueous liquid waste containing adhesives or sealants with organic solvents or other dangerous substances  
08 04 16 Aqueous liquid waste containing adhesives or sealants other than those mentioned in 08 04 15  
08 04 99 Wastes not otherwise specified
- 08 05 Wastes not otherwise specified**  
08 05 01\* Waste isocyanates
- 09 WASTES FROM THE PHOTOGRAPHIC INDUSTRY**
- 09 01 Wastes from the photographic industry**  
09 01 01\* Water-based developer and activator solutions  
09 01 02\* Water-based offset plate developer solutions  
09 01 03\* Solvent-based developer solutions  
09 01 04\* Fixer solutions  
09 01 05\* Bleach solutions and bleach fixer solutions  
09 01 06\* Waste containing silver from on-site treatment of photographic waste  
09 01 07 Photographic film and paper containing silver or silver compounds  
09 01 08 Photographic film and paper free of silver or silver compounds  
09 01 10 Single-use cameras without batteries  
09 01 11\* Single-use cameras containing batteries included in 16 06 01, 16 06 02 or 16 06 03  
09 01 12 Single-use cameras containing batteries other than those mentioned in 09 01 11  
09 01 99 Wastes not otherwise specified
- 10 INORGANIC WASTES FROM THERMAL PROCESSES**
- 10 01 Wastes from power stations and other combustion plants (except 19)**  
10 01 01 Bottom ash  
10 01 02 Coal fly ash  
10 01 03 Peat and (untreated) wood fly ash  
10 01 04\* Oil fly ash  
10 01 05 Calcium-based reaction waste from flue gas desulphurisation in solid form  
10 01 06 Other solid waste from gas treatment  
10 01 07 Calcium-based reaction waste from flue gas desulphurisation in sludge form  
10 01 08 Other sludges from gas treatment  
10 01 09\* Sulphuric acid  
10 01 11 Aqueous sludges from boiler cleansing  
10 01 12 Spent linings and refractories  
10 01 13\* Fly ash from emulsified hydrocarbons used as fuel  
10 01 99 Wastes not otherwise specified

- 10 02 Wastes from the iron and steel industry**
- 10 02 01 Waste from the processing of slag
  - 10 02 02 Unprocessed slag
  - 10 02 05 Other sludges
  - 10 02 06 Spent linings and refractories
  - 10 02 07\* Solid waste from gas treatment of electrical arc furnaces containing dangerous substances
  - 10 02 08 Solid waste from gas treatment of electrical arc furnaces other than those mentioned in 10 02 07
  - 10 02 09 Solid waste from gas treatment of other iron and steel processes
  - 10 02 10 Mill scales
  - 10 02 11\* Waste from cooling water treatment containing oil
  - 10 02 12 Other waste from cooling water treatment
  - 10 02 13\* Sludges from gas treatment containing dangerous substances
  - 10 02 14 Sludges from gas treatment other than those mentioned in 10 02 13
  - 10 02 99 Wastes not otherwise specified
- 10 03 Wastes from aluminium thermal metallurgy**
- 10 03 01\* Tars and other carbon-containing wastes from anode manufacture
  - 10 03 02 Anode scraps
  - 10 03 04\* Primary smelting slags/white drosses
  - 10 03 05 Alumina dust
  - 10 03 06 Used carbon strips and fireproof materials from electrolysis
  - 10 03 07\* Spent pot linings
  - 10 03 08\* Salt slags from secondary smelting
  - 10 03 09\* Black drosses from secondary smelting
  - 10 03 10\* Waste from treatment of salt slags and black drosses
  - 10 03 11 Flue gas dust
  - 10 03 12 Other particulates and dust (including ball mill dust)
  - 10 03 13 Solid waste from gas treatment
  - 10 03 14 Sludges from gas treatment
  - 10 03 15\* Skimmings that are flammable or emit, upon contact with water, flammable gases in dangerous quantities
  - 10 03 16 Skimmings other than those mentioned in 10 03 15
  - 10 03 99 Wastes not otherwise specified
- 10 04 Wastes from lead thermal metallurgy**
- 10 04 01\* Slags (first and second smelting)
  - 10 04 02\* Dross and skimmings (first and second smelting)
  - 10 04 03\* Calcium arsenate
  - 10 04 04\* Flue gas dust
  - 10 04 05\* Other particulates and dust
  - 10 04 06\* Solid waste from gas treatment
  - 10 04 07\* Sludges from gas treatment
  - 10 04 08 Spent linings and refractories
  - 10 04 99 Wastes not otherwise specified
- 10 05 Wastes from zinc thermal metallurgy**
- 10 05 01\* Slags (first and second smelting)
  - 10 05 02 Dross and skimmings (first and second smelting)
  - 10 05 03\* Flue gas dust
  - 10 05 04 Other particulates and dust
  - 10 05 05\* Solid waste from gas treatment
  - 10 05 06\* Sludges from gas treatment
  - 10 05 07 Spent linings and refractories
  - 10 05 99 Wastes not otherwise specified

- 10 06 Wastes from copper thermal metallurgy**
- 10 06 01 Slags (first and second smelting)
  - 10 06 02 Dross and skimmings (first and second smelting)
  - 10 06 03\* Flue gas dust
  - 10 06 04 Other particulates and dust
  - 10 06 05\* Waste from electrolytic refining
  - 10 06 06\* Solid waste from gas treatment
  - 10 06 07\* Sludges from gas treatment
  - 10 06 08 Spent linings and refractories
  - 10 06 99 Wastes not otherwise specified
- 10 07 Wastes from silver, gold and platinum thermal metallurgy**
- 10 07 01 Slags (first and second smelting)
  - 10 07 02 Dross and skimmings (first and second smelting)
  - 10 07 03 Solid waste from gas treatment
  - 10 07 04 Other particulates and dust
  - 10 07 05 Sludges from gas treatment
  - 10 07 06 Spent linings and refractories
  - 10 07 99 Wastes not otherwise specified
- 10 08 Wastes from other non-ferrous thermal metallurgy**
- 10 08 01 Slags (first and second smelting)
  - 10 08 02 Dross and skimmings (first and second smelting)
  - 10 08 03 Flue gas dust
  - 10 08 04 Other particulates and dust
  - 10 08 05 Solid waste from gas treatment
  - 10 08 06 Sludges from gas treatment
  - 10 08 07 Spent linings and refractories
  - 10 08 99 Wastes not otherwise specified
- 10 09 Wastes from casting of ferrous pieces**
- 10 09 01 Casting cores and moulds containing organic binders which have not undergone pouring
  - 10 09 02 Casting cores and moulds containing organic binders which have undergone pouring
  - 10 09 03 Furnace slag
  - 10 09 04 Furnace dust
  - 10 09 99 Wastes not otherwise specified
- 10 10 Wastes from casting of non-ferrous pieces**
- 10 10 01 Casting cores and moulds containing organic binders which have not undergone pouring
  - 10 10 02 Casting cores and moulds containing organic binders which have undergone pouring
  - 10 10 03 Furnace slag
  - 10 10 04 Furnace dust
  - 10 10 99 Wastes not otherwise specified
- 10 11 Wastes from manufacture of glass and glass products**
- 10 11 01 Waste preparation mixture before thermal processing
  - 10 11 02 Waste glass
  - 10 11 03 Waste glass-based fibrous materials
  - 10 11 04 Flue gas dust
  - 10 11 05 Other particulates and dust
  - 10 11 06 Solid waste from gas treatment
  - 10 11 07 Sludges from gas treatment
  - 10 11 08 Spent linings and refractories
  - 10 11 99 Wastes not otherwise specified

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- 10 12 Wastes from manufacture of ceramic goods, bricks, tiles and construction products**
- 10 12 01 Waste preparation mixture before thermal processing
  - 10 12 02 Flue gas dust
  - 10 12 03 Other particulates and dust
  - 10 12 04 Solid waste from gas treatment
  - 10 12 05 Sludges from gas treatment
  - 10 12 06 Discarded moulds
  - 10 12 07 Spent linings and refractories
  - 10 12 99 Wastes not otherwise specified
- 10 13 Wastes from manufacture of cement, lime and plaster and articles and products made from them**
- 10 13 01 Waste preparation mixture before thermal processing
  - 10 13 02 Waste from asbestos-cement manufacture
  - 10 13 03 Waste from other cement-based composite materials
  - 10 13 04 Waste from calcination and hydration of lime
  - 10 13 05 Solid waste from gas treatment
  - 10 13 06 Other particulates and dust
  - 10 13 07 Sludges from gas treatment
  - 10 13 08 Spent linings and refractories
  - 10 13 99 Wastes not otherwise specified
- 11 INORGANIC METAL-CONTAINING WASTES FROM METAL TREATMENT AND THE COATING OF METALS, AND NON-FERROUS HYDROMETALLURGY**
- 11 01 Liquid wastes and sludges from metal treatment and coating of metals, (e.g. galvanic processes, zinc coating processes, pickling processes, etching, phosphatising, alkaline degreasing)**
- 11 01 01\* Cyanidic (alkaline) waste containing heavy metals other than chromium
  - 11 01 02\* Cyanidic (alkaline) waste not containing heavy metals
  - 11 01 03\* Cyanide-free wastes containing chromium
  - 11 01 04 Cyanide-free wastes not containing chromium
  - 11 01 05\* Acidic pickling solutions
  - 11 01 06\* Acids not otherwise specified
  - 11 01 07\* Alkalis not otherwise specified
  - 11 01 08\* Phosphatising sludges
- 11 02 Wastes and sludges from non-ferrous hydrometallurgical processes**
- 11 02 01 Sludges from copper hydrometallurgy
  - 11 02 02\* Sludges from zinc hydrometallurgy (including jarosite, goethite)
  - 11 02 03 Waste from the production of anodes for aqueous electrolytical processes
  - 11 02 04 Sludges not otherwise specified
- 11 03 Sludges and solids from tempering processes**
- 11 03 01\* Waste containing cyanide
  - 11 03 02\* Other wastes
- 11 04 Other inorganic metal-containing wastes not otherwise specified**
- 11 04 01 Other inorganic metal-containing wastes not otherwise specified
- 12 WASTES FROM SHAPING AND SURFACE TREATMENT OF METALS AND PLASTICS**
- 12 01 Wastes from shaping (including forging, welding, pressing, drawing, turning, cutting and filing)**
- 12 01 01 Ferrous metal filings and turnings
  - 12 01 02 Other ferrous metal particles
  - 12 01 03 Non-ferrous metal filings and turnings
  - 12 01 04 Other non-ferrous metal particles

- 12 01 05 Plastics particles
- 12 01 06\* Waste machining oils containing halogens (except emulsions)
- 12 01 07\* Waste machining oils free of halogens (except emulsions)
- 12 01 08\* Waste machining emulsions containing halogens
- 12 01 09\* Waste machining emulsions free of halogens
- 12 01 10\* Synthetic machining oils
- 12 01 11\* Machining sludges
- 12 01 12\* Spent waxes and fats
- 12 01 13 Welding waste
- 12 01 99 Wastes not otherwise specified
- 12 02 Wastes from mechanical surface treatment processes (blasting, grinding, honing, lapping, polishing)**
- 12 02 01 Spent blasting grit
- 12 02 02 Sludges from grinding, honing and lapping
- 12 02 03 Polishing sludges
- 12 02 99 Wastes not otherwise specified
- 12 03 Wastes from water and steam degreasing processes (except 11)**
- 12 03 01\* Aqueous washing liquids
- 12 03 02\* Steam degreasing waste
- 13 OIL WASTES (except edible oils, 05 and 12)**
- 13 01 Waste hydraulic oils and brake fluids**
- 13 01 01\* Hydraulic oils, containing PCBs or PCTs
- 13 01 02\* Other chlorinated hydraulic oils (except emulsions)
- 13 01 03\* Non-chlorinated hydraulic oils (except emulsions)
- 13 01 04\* Chlorinated emulsions
- 13 01 05\* Non-chlorinated emulsions
- 13 01 06\* Hydraulic oils containing only mineral oil
- 13 01 07\* Other hydraulic oils
- 13 01 08\* Brake fluids
- 13 02 Waste engine, gear and lubricating oils**
- 13 02 01\* Chlorinated engine, gear and lubricating oils
- 13 02 02\* Non-chlorinated engine, gear and lubricating oils
- 13 02 03\* Other engine, gear and lubricating oils
- 13 03 Waste insulating and heat transmission oils and other liquids**
- 13 03 01\* Insulating or heat transmission oils and other liquids containing PCBs or PCTs
- 13 03 02\* Other chlorinated insulating and heat transmission oils and other liquids
- 13 03 03\* Non-chlorinated insulating and heat transmission oils and other liquids
- 13 03 04\* Synthetic insulating and heat transmission oils and other liquids
- 13 03 05\* Mineral insulating and heat transmission oils
- 13 04 Bilge oils**
- 13 04 01\* Bilge oils from inland navigation
- 13 04 02\* Bilge oils from jetty sewers
- 13 04 03\* Bilge oils from other navigation
- 13 05 Oil/water separator contents**
- 13 05 01\* Oil/water separator solids
- 13 05 02\* Oil/water separator sludges
- 13 05 03\* Interceptor sludges
- 13 05 04\* Desalter sludges or emulsions
- 13 05 05\* Other emulsions

- 13 06 Oil waste not otherwise specified**  
13 06 01\* Oil waste not otherwise specified
- 14 WASTES FROM ORGANIC SUBSTANCES USED AS SOLVENTS (except 07 and 08)**
- 14 01 Wastes from metal degreasing and machinery maintenance**  
14 01 01\* chlorofluorocarbons  
14 01 02\* other halogenated solvents and solvent mixes  
14 01 03\* Other solvents and solvent mixes  
14 01 04\* Aqueous solvent mixes containing halogens  
14 01 05\* Aqueous solvent mixes free of halogens  
14 01 06\* Sludges or solid wastes containing halogenated solvents  
14 01 07\* Sludges or solid wastes free of halogenated solvents
- 14 02 Wastes from textile cleaning and degreasing of natural products**  
14 02 01\* Halogenated solvents and solvent mixes  
14 02 02\* Solvent mixes or organic liquids free of halogenated solvents  
14 02 03\* Sludges or solid waste containing halogenated solvents  
14 02 04\* Sludges or solid waste containing other solvents
- 14 03 Wastes from the electronic industry**  
14 03 01\* Chlorofluorocarbons  
14 03 02\* Other halogenated solvents  
14 03 03\* Solvents and solvent mixes free of halogenated solvents  
14 03 04\* Sludges or solid wastes containing halogenated solvents  
14 03 05\* Sludges or solid wastes containing other solvents
- 14 04 Wastes from coolants, foam/aerosol propellents**  
14 04 01\* Chlorofluorocarbons  
14 04 02\* Other halogenated solvents and solvent mixes  
14 04 03\* Other solvents and solvent mixes  
14 04 04\* Sludges or solid waste containing halogenated solvents  
14 04 05\* Sludges or solid waste containing other solvents
- 14 05 Wastes from solvent and coolant recovery (still bottoms)**  
14 05 01\* Chlorofluorocarbons  
14 05 02\* Halogenated solvents and solvent mixes  
14 05 03\* Other solvents and solvent mixes  
14 05 04\* Sludges containing halogenated solvents  
14 05 05\* Sludges containing other solvents
- 15 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED**
- 15 01 Packaging**  
15 01 01 Paper and cardboard packaging  
15 01 02 Plastic packaging  
15 01 03 Wooden packaging  
15 01 04 Metallic packaging  
15 01 05 Composite packaging  
15 01 06 Mixed packaging  
15 01 07 Glass packaging  
15 01 08\* Packaging containing residues of or contaminated by dangerous substances



- 15 02 Absorbents, filter materials, wiping cloths and protective clothing**
- 15 02 02\* Absorbents, filter materials, wiping cloths, protective clothing contaminated by dangerous substances
- 15 02 03 Absorbents, filter materials, wiping cloths and protective clothing other than those mentioned in 15 02 02
- 16 WASTES NOT OTHERWISE SPECIFIED IN THE LIST**
- 16 01 End-of-life vehicles and their components**
- 16 01 03 End-of-life tyres
- 16 01 04 Discarded vehicles
- 16 01 06 End-of-life vehicles, drained of liquids and emptied of other hazardous components
- 16 01 99 Wastes not otherwise specified
- 16 02 Discarded equipment and its components**
- 16 02 09\* Transformers and capacitors containing PCBs or PCTs
- 16 02 10\* Discarded equipment containing or contaminated by PCBs or PCTs other than those mentioned in 16 02 09
- 16 02 11\* Discarded equipment containing chlorofluorocarbons
- 16 02 12\* Discarded equipment containing free asbestos
- 16 02 13\* Discarded equipment containing hazardous components other than those mentioned in 16 02 09 to 16 02 12
- 16 02 14 Discarded equipment other than those mentioned in 16 02 09 to 16 02 13
- 16 02 15\* Hazardous components removed from discarded equipment
- 16 02 16 Components removed from discarded equipment other than those mentioned in 16 02 15
- 16 03 Off-specification batches**
- 16 03 01 Inorganic off-specification batches
- 16 03 02 Organic off-specification batches
- 16 04 Waste explosives**
- 16 04 01\* Waste ammunition
- 16 04 02\* Fireworks waste
- 16 04 03\* Other waste explosives
- 16 05 Chemicals and gases in containers**
- 16 05 01 Industrial gases in high pressure cylinders, LPG containers and industrial aerosol containers (including halons)
- 16 05 02 Other waste containing inorganic chemicals, e.g. lab chemicals not otherwise specified, fire extinguishing powders
- 16 05 03 Other waste containing organic chemicals, e.g. lab chemicals not otherwise specified
- 16 06 Batteries and accumulators**
- 16 06 01\* Lead batteries
- 16 06 02\* Ni-Cd batteries
- 16 06 03\* Mercury-containing batteries
- 16 06 04 Alkaline batteries (except 16 06 03)
- 16 06 05 Other batteries and accumulators
- 16 06 06\* Electrolyte from batteries and accumulators
- 16 07 Wastes from transport and storage tank cleaning (except 05 and 12)**
- 16 07 01\* Waste from marine transport tank cleaning, containing chemicals
- 16 07 02\* Waste from marine transport tank cleaning, containing oil
- 16 07 03\* Waste from railway and road transport tank cleaning, containing oil
- 16 07 04\* Waste from railway and road transport tank cleaning, containing chemicals
- 16 07 05\* Waste from storage tank cleaning, containing chemicals
- 16 07 06\* Waste from storage tank cleaning, containing oil
- 16 07 07 Solid waste from ship cargoes
- 16 07 99 Wastes not otherwise specified

- 16 08 Spent catalysts**
- 16 08 01 Spent catalysts containing gold, silver, rhenium, rhodium, palladium, iridium or platinum (except 16 08 07)
  - 16 08 02\* Spent catalysts containing dangerous transition metals <sup>(1)</sup> or transition metal compounds
  - 16 08 03 Spent catalysts containing other transition metals <sup>(2)</sup> or transition metal compounds (except 16 08 07)
  - 16 08 04 Spent fluid catalytic cracking catalysts
  - 16 08 05\* Spent catalysts containing phosphoric acid
  - 16 08 06\* Spent liquids used as catalysts
  - 16 08 07\* Spent catalysts contaminated with dangerous substances
- 17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING ROAD CONSTRUCTION)**
- 17 01 Concrete, bricks, tiles, ceramics, and gypsum-based materials**
- 17 01 01 Concrete
  - 17 01 02 Bricks
  - 17 01 03 Tiles and ceramics
  - 17 01 04 Gypsum-based construction materials
  - 17 01 05 Asbestos-based construction materials
- 17 02 Wood, glass and plastic**
- 17 02 01 Wood
  - 17 02 02 Glass
  - 17 02 03 Plastic
- 17 03 Asphalt, tar and tarred products**
- \* 17 03 01 Asphalt containing tar
  - 17 03 02 Asphalt not containing tar
  - 17 03 03 Tar and tar products
- 17 04 Metals (including their alloys)**
- 17 04 01 Copper, bronze, brass
  - 17 04 02 Aluminium
  - 17 04 03 Lead
  - 17 04 04 Zinc
  - 17 04 05 Iron and steel
  - 17 04 06 Tin
  - 17 04 07 Mixed metals
  - 17 04 08 Cables
- 17 05 Soil and dredging spoil**
- 17 05 03\* Soil and stones containing dangerous substances
  - 17 05 04 Soil and stones other than those mentioned in 17 05 03
  - 17 05 05\* Dredging spoil containing dangerous substances
  - 17 05 06 Dredging spoil other than those mentioned in 17 05 05
- 17 06 Insulation materials**
- 17 06 01\* Insulation materials containing asbestos
  - 17 06 02 Other insulation materials
- 17 07 Mixed construction and demolition waste**
- 17 07 02\* Mixed construction and demolition waste or separated fractions containing dangerous substances
  - 17 07 03 Mixed construction and demolition waste other than those mentioned in 17 07 02

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- 18 WASTES FROM HUMAN OR ANIMAL HEALTH CARE AND/OR RELATED RESEARCH (except kitchen and restaurant wastes not arising from immediate health care)**
- 18 01 Wastes from natal care, diagnosis, treatment or prevention of disease in humans**
- 18 01 01 Sharps (except 18 01 03)
- 18 01 02 Body parts and organs including blood bags and blood preserves (except 18 01 03)
- 18 01 03\* Waste whose collection and disposal is subject to special requirements in view of the prevention of infection
- 18 01 04 Waste whose collection and disposal is not subject to special requirements in view of the prevention of infection, (e.g. dressings, plaster casts, linen, disposable clothing, diapers)
- 18 01 06\* Chemicals consisting of or containing dangerous substances
- 18 01 07 Chemicals other than those mentioned in 18 01 06
- 18 01 08\* Cytotoxic and cytostatic medicines
- 18 01 09 Medicines other than those mentioned in 18 01 08
- 18 01 10\* Amalgam waste from dental care
- 18 02 Wastes from research, diagnosis, treatment or prevention of disease involving animals**
- 18 02 01 Sharps (except 18 02 02)
- 18 02 02\* Waste whose collection and disposal is subject to special requirements in view of the prevention of infection
- 18 02 03 Waste whose collection and disposal is not subject to special requirements in view of the prevention of infection
- 18 02 05\* Chemicals consisting of or containing dangerous substances
- 18 02 06 Chemicals other than those mentioned in 18 02 05
- 18 02 07\* Cytotoxic and cytostatic medicines
- 18 02 08 Medicines other than those mentioned in 18 02 07
- 19 WASTES FROM WASTE TREATMENT FACILITIES, OFF-SITE WASTE WATER TREATMENT PLANTS AND THE WATER INDUSTRY**
- 19 01 Wastes from incineration or pyrolysis of waste**
- 19 01 02 Ferrous materials removed from bottom ash
- 19 01 05\* Filter cake from gas treatment
- 19 01 06\* Aqueous liquid waste from gas treatment and other aqueous liquid waste
- 19 01 07\* Solid waste from gas treatment
- 19 01 10\* Spent activated carbon from flue gas treatment
- 19 01 11\* Bottom ash and slag containing dangerous substances
- 19 01 12 Bottom ash and slag other than those mentioned in 19 01 11
- 19 01 13\* Fly ash containing dangerous substances
- 19 01 14 Fly ash other than those mentioned in 19 01 13
- 19 01 15\* Boiler dust containing dangerous substances
- 19 01 16 Boiler dust other than those mentioned in 19 01 15
- 19 01 17\* Pyrolysis waste containing dangerous substances
- 19 01 18 Pyrolysis waste other than those mentioned in 19 01 17
- 19 01 99 Wastes not otherwise specified
- 19 02 Wastes from specific physico/chemical treatments of industrial waste, (e.g. dechromatation, decyanidation, neutralisation)**
- 19 02 01\* Metal hydroxide sludges and other sludges from metal insolubilisation treatment
- 19 02 03 Premixed waste composed only of wastes not marked as hazardous
- 19 02 04\* Premixed waste composed of at least one waste marked as hazardous

- 19 03 Stabilised/solidified wastes (\*)**
- 19 03 04\* Waste marked as hazardous, partly stabilised (\*)
- 19 03 05 Stabilised waste other than those mentioned in 19 03 04
- 19 03 06\* Waste marked as hazardous, solidified
- 19 03 07 Solidified waste other than those mentioned in 19 03 06
- 19 04 Vitriified waste and wastes from vitrification**
- 19 04 01 Vitriified waste
- 19 04 02\* Fly ash and other flue gas treatment waste
- 19 04 03\* Non-vitriified solid phase
- 19 04 04 Aqueous liquid waste from vitriified waste tempering
- 19 05 Wastes from aerobic treatment of solid wastes**
- 19 05 01 Non-composted fraction of municipal and similar waste
- 19 05 02 Non-composted fraction of animal and vegetable waste
- 19 05 03 Off-specification compost
- 19 05 99 Wastes not otherwise specified
- 19 06 Wastes from anaerobic treatment of waste**
- 19 06 01 Anaerobic treatment sludges of municipal and similar waste
- 19 06 02 Anaerobic treatment sludges of animal and vegetal waste
- 19 06 99 Wastes not otherwise specified
- 19 07 Landfill leachate**
- 19 07 01 Landfill leachate
- 19 08 Wastes from waste water treatment plants not otherwise specified**
- 19 08 01 Screenings
- 19 08 02 Waste from desanding
- 19 08 03\* Grease and oil mixture from oil/waste water separation
- 19 08 04 Sludges from the treatment of industrial waste water
- 19 08 05 Sludges from treatment of urban waste water
- 19 08 06\* Saturated or spent ion exchange resins
- 19 08 07\* Solutions and sludges from regeneration of ion exchangers
- 19 08 99 Wastes not otherwise specified
- 19 09 Wastes from the preparation of drinking water or water for industrial use**
- 19 09 01 Solid waste from primary filtration and screenings
- 19 09 02 Sludges from water clarification
- 19 09 03 Sludges from decarbonation
- 19 09 04 Spent activated carbon
- 19 09 05 Saturated or spent ion exchange resins
- 19 09 06 Solutions and sludges from regeneration of ion exchangers
- 19 09 99 Wastes not otherwise specified
- 19 10 Wastes from shredding of metal-containing waste**
- 19 10 01 Iron and steel waste
- 19 10 02 Non-ferrous waste
- 19 10 03\* Fluff — light fraction containing dangerous substances
- 19 10 04 Fluff — light fraction other than those mentioned in 19 10 03
- 19 10 05\* Dust and other fractions containing dangerous substances
- 19 10 06 Dust and other fractions other than those mentioned in 19 10 05

- 20 MUNICIPAL WASTES AND SIMILAR COMMERCIAL, INDUSTRIAL AND INSTITUTIONAL WASTES INCLUDING SEPARATELY COLLECTED FRACTIONS**
- 20 01 Separately collected fractions**
- 20 01 01 Paper and cardboard
- 20 01 02 Glass
- 20 01 03 Small plastics
- 20 01 04 Other plastics
- 20 01 05 Small metals (cans, etc.)
- 20 01 06 Other metals
- 20 01 07 Wood
- 20 01 08 Organic kitchen waste
- 20 01 10 Clothes
- 20 01 11 Textiles
- 20 01 13\* Solvents
- 20 01 14\* Acids
- 20 01 15\* Alkalines
- 20 01 17\* Photochemicals
- 20 01 19\* Pesticides
- 20 01 21\* Fluorescent tubes and other mercury-containing waste
- 20 01 22 Aerosols
- 20 01 23\* Discarded equipment containing chlorofluorocarbons
- 20 01 25 Edible oil and fat
- 20 01 26\* Oil and fat other than those mentioned in 20 04 25
- 20 01 27\* Paint, inks, adhesives and resins containing dangerous substances
- 20 01 28 Paint, inks, adhesives and resins other than those mentioned in 20 01 27
- 20 01 29\* Detergents containing dangerous substances
- 20 01 30 Detergents other than those mentioned in 20 01 29
- 20 01 31\* Cytotoxic and cytostatic medicines
- 20 01 32 Medicines other than those mentioned in 20 01 31
- 20 01 33\* Mixed batteries and accumulators containing batteries or accumulators included in 16 06 01, 16 06 02 or 16 06 03
- 20 01 34 Batteries and accumulators other than those mentioned in 20 01 33
- 20 01 35\* Discarded equipment other than those mentioned in 20 01 21 and 20 01 23 containing hazardous components
- 20 01 36 Discarded equipment other than those mentioned in 20 01 21, 20 01 23 and 20 01 35
- 20 02 Garden and park wastes (including cemetery waste)**
- 20 02 01 Compostable waste
- 20 02 02 Soil and stones
- 20 02 03 Other non-compostable wastes
- 20 03 Other municipal wastes**
- 20 03 01 Mixed municipal waste
- 20 03 02 Waste from markets
- 20 03 03 Street cleaning residues
- 20 03 04 Septic tank sludge

(1) Transition metals are: scandium, vanadium, manganese, cobalt, copper, yttrium, niobium, hafnium, tungsten, titanium, chromium, iron, nickel, zinc, zirconium, molybdenum, tantalum, rhenium.

(2) See footnote 1.

(3) Stabilisation processes change the dangerousness of the constituents in the waste and thus transform hazardous waste into non-hazardous waste. Solidification processes only change the physical state of the waste by using additives, (e.g. liquid into solid) without changing the chemical properties of the waste.

(4) A waste is considered as partly stabilised if after the stabilisation process dangerous constituents which have not been changed completely into non-dangerous constituents could be released into the environment in short, middle or long term.

# Appendix

APPENDIX A

# GEBRUIKSCERTIFICAAT (VLAREA 17.12.1997)



OPENBARE  
AFVALSTOFFENMAATSCHAPPIJ  
VOOR HET VLAAMSE GEWEST

Kan. De Deckerstraat 22 - 26  
2800 MECHELEN

Tel. 015/28.42.84  
Fax 015/28.41.64

**DOSSIERNUMMER : BOU-09-90.003/C422**

**HOUDER :**

Indaver NV  
Poldervlietweg  
2030 Antwerpen

**GEBRUIKSGBIED :**

in of als niet-vormgegeven bouwstof

**NAAM SECUNDAIRE GRONDSTOF :**

voorbehandelde bodemas afkomstig van verbrandingsinstallaties voor huishoudelijke afvalstoffen

**AARD, SAMENSTELLING EN HERKOMST SECUNDAIRE GRONDSTOF :**

Uitgesorteerde en gewassen bodemas-granulaten afkomstig van verbrandings-installaties voor huishoudelijke afvalstoffen

De granulaten zijn dermate uitgesorteerd dat ze inzake uitloging voldoen aan de Vlarea-normen. De granulometrie van de als bouwstof te gebruiken granulaten wordt bepaald door de wijze waarop de uitgesorteerde granulaten al dan niet verder worden gebroken en kan variëren tussen 0 en 50 mm.

**VOORWAARDEN VOOR GEBRUIK :**

De granulaten kunnen gebruikt worden als niet-vormgegeven bouwstof in een goedgekeurd bouwwerk, meer bepaald voor gebruik in onderfunderingen van wegen of andere constructies.

In een tweede leven kunnen de granulaten opnieuw in dergelijke toepassingen worden gebruikt. Er moet enkel worden voorkomen dat ze met de bodem worden vermengd en als bodemsubstraat zouden fungeren.

De granulaten voldoen aan de geldende Vlarea-criteria, meer in het bijzonder aan de geldende uitloogcriteria. Conform Vlarea kunnen ze bijgevolg zonder probleem worden toegepast in toepassingshoogtes tot 70 cm, zonder dat de kwaliteit van de omgevende bodem in het gedrang komt, ook niet op langere termijn. Tijdelijke blootstelling aan neerslag tijdens de werken geeft bijgevolg geen probleem. Eventuele stofverspreiding door wind of dergelijke moet wel worden voorkomen.

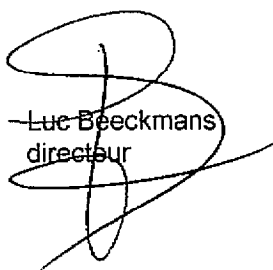
Voor grotere toepassingshoogtes moet vooraf contact worden genomen met de producent die daarvoor zijn goedkeuring moet geven.

Omwille van de gedeeltelijk fijnkorrelige structuur en de mogelijke vermenging met de bodem zijn de granulaten niet geschikt voor oppervlakteverhardingen of allerlei aanvullingen en ophogingen waarbij de granulaten niet afdoende fysisch worden afgeschermd tegen vermenging met de bodem.

TERMIJN :

Het gebruikscertificaat is geldig van : 16 maart 2000 tot 15 maart 2005

Afgeleverd te Mechelen, 16 maart 2000

  
Luc Beeckmans  
directeur

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# CERTIFICATE OF USE

(VLAREA 17.12.1997)

Public Waste Company for the Flemish Region

Kan. De Deckerstraat 22 – 26

2800 MECHELEN

Tel. 015 28.42.84

Fax 015 28.41.64

FILE NUMBER: BOU-09-90.003/C422

HOLDER:

Indaver NV  
Poldervlietweg  
2030 Antwerp

SCOPE OF USE:

In or as an unformed building material

NAME OF SECONDARY RAW MATERIAL:

Pre-treated soil ash originating from domestic waste incineration facilities.

NATURE, COMPOSITION AND ORIGIN OF SECONDARY RAW MATERIAL:

Sorted and washed granulated soil ash originating from domestic waste incineration facilities.

The granulates are sorted to ensure that they comply with the VLAREA standards concerning leaching. The granulometry of the granulates to be used as building material is determined by the manner in which the sorted granulates are broken further, if at all, and may vary from 0 to 50 mm.

CONDITIONS OF USE:

The granulates can be used as an unformed building material in an approved building work, and specifically for use in sub-foundations of roads or other constructions.

In a second life, the granulates can again be used in similar applications. It is merely necessary to prevent them from being mixed with the soil and functioning as a soil substrate.

The granulates meet the applicable VLAREA criteria, particularly the applicable leaching criteria. In accordance with VLAREA, they can therefore be used without problem in application heights up to 70 cm, without jeopardising surrounding soil quality, even in the longer term. Temporary exposure to precipitation during the works therefore poses no problem. Any spreading of dust by wind or similar means must, however, be prevented.

For higher application levels, contact must first be made with the manufacturer, who must give approval for them.

Because of the partial fine-grained structure and possible mixing with the soil, the granulates are unsuitable for surface hardenings or any fillings and levelling up where the granulates do not have sufficient physical protection against mixing with the soil.

TERM:

The certificate of use is valid from 16 March 2000 – 15 March 2005.

Issued in Mechelen on 16 March 2000.

[Signed]

Luc Beeckmans  
Director

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# Appendix 4

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Translation from Dutch

PROVINCE OF EAST FLANDERS

Env. Lic. for Grid Furnaces 1 & 2

Minutes of the deliberations and resolutions of the Permanent Delegation

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Session of: 29 June 1995

**Present:** Herman Balthazar, Governor and Chairman,  
Paul Wille, Alexander Vercamer, Ivan Verleyen, Jean-Pierre Van Der  
Meiren, Guido De Padt, members;  
Albert De Smet, Provincial Registrar.

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8th Directorate – Section 82

Environmental Health

Our ref. VLAREM - 46003/158/A/1/PC/tdb

Decree of the Permanent Delegation of the Provincial Council granting a licence to NV INDAVER B, of Poldervlietweg, ANTWERP 3, to operate grid furnaces (waste burning) located on the plots identified in the Land Register under BEVEREN (Doel) Division 8, Section A, plot no(s). 100/a at de Geslecht 3 in BEVEREN (Doel).

### **The Permanent Delegation of the Provincial Council,**

Having regard to the ordinance of 28.6.1985 concerning the environmental licence, amended by ordinances of 7.2.1990 and 12.12.1990;

Having regard to the decree of the Flemish Executive of 6.2.1991 establishing the Flemish Environmental Licensing Regulations;

Having regard to the application submitted on 17.1.1995 by NV INDAVER B, a limited company, of Poldervlietweg, ANTWERP 3 (Social Security Register no. 87159527751/VAT no. 442839147) for an environmental licence for a facility located at Geslecht 3, 9130 BEVEREN (Doel), on the plots identified in the Land Register as BEVEREN (Doel) Division 8, Section A, plot nos. 100/a, the subject of which is the addition of a waste incineration (waste burning) facility to a processing facility for fluorescent strip lights (headings: 2.2.g, 2.6.3, 3.2., 12.2.2, 16.3.2.3, 17.3.2.1, 17.3.3.1, 17.3.6.2, 31.1.2, 39.1.3 and 39.3.1);

Having regard to the registered letter of 30.1.1995 which declared the environmental licence application admissible and complete;

Having regard to the documents certifying that the environmental licence application received the required publicity in accordance with Article 17 of the Flemish Environmental Licensing Regulations;

Having regard to the minutes dated 13.3.1995 containing the written and verbal objections and comments made at the public inquiry, from which it appears that no objections were submitted;

Having regard to the report of the information meeting dated 21.2.1995;

Having regard to the FAVOURABLE recommendation of the Mayor and Aldermen of BEVEREN dated 13.3.1995;

Having regard to the FAVOURABLE recommendation (separate for the turbine and installation for non-nuclear electricity generation) dated 29.3.1995 of the Environmental Licensing Council of the Environment, Conservation and Land Use Authority of the Department of the Environment and Infrastructure;

Having regard to the FAVOURABLE recommendation of the Town Planning Council of the Town Planning, Housing and Monument Preservation Authority of the Department of the Environment and Infrastructure dated 22.2.1995;

Having regard to the FAVOURABLE recommendation of the Preventive and Social Healthcare Council of the Healthcare Authority of the Department of Welfare, Public Health and Culture dated 17.3.1995;

Having regard to the UNFAVOURABLE recommendation of the Public Waste Company for the Region of Flanders dated 30.3.1995;

# Appendix 5

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Translation from Dutch

**Province of East Flanders**

Env. Lic. for Grid Furnace 3

8th Directorate  
Department 82  
**Environmental Health**

## **Decree of the Permanent Delegation**

in the presence of:

Alexander Vercamer, acting Governor and Chairman,  
of the following members:

Paul Wille  
Ivan Verleyen  
Jean-Pierre Van Der Meiren  
Guido De Padt  
Arie Abbeloos  
and of Albert De Smet, Provincial Registrar.

Reference: 46003/233/A/3/GG/ivds

Concerning: INDAVER B  
BEVEREN

Rapporteur: Mr Paul Wille

**Decree of the Permanent Delegation of the Provincial Council granting a licence to NV INDAVER B, of Poldervlietweg, ANTWERP 3, to add a third grid furnace located on the plots identified in the Land Register under BEVEREN Division 8, Section A, plot no(s). 100/b and 100/c, at Molenweg – Haven 1940 in BEVEREN.**

The Permanent Delegation,

Having regard to its decree dated 12.11.1992 (20 years) granting a licence to operate a processing unit for lights and batteries containing mercury, consisting of two parts:

- A breaker and sorter installation; and
- A mercury distillation unit;

Having regard to the Ministerial Decree of 14.6.1993 amending the Permanent Delegation's decree of 12.11.1992;

Having regard to the Ministerial Decree of 10.1.1994 amending the Permanent Delegation's decree of 12.11.1992;

Having regard to the Permanent Delegation's decree of 29.6.1995 (valid till 12.11.2012) granting a licence to operate a grid furnace (waste incineration);

Having regard to the Permanent Delegation's decree of 28.9.1995 (valid till 12.11.2012) granting a licence to add a furnace;

Having regard to the Permanent Delegation's decree of 28.9.1995 (valid till 12.11.2012) granting a licence to operate infrastructure;

Having regard to the Permanent Delegation's decree of 14.3.1996 (valid till 14.3.2006) granting a licence to operate a new cat. 1 dump;

Considering that the application is accompanied by an Environmental Impact Report, ruled in order on 24.6.1997, the code number of which is CAH/97/311 and the title of which is 'Environmental Impact Report on the Set-Up of a Grid Furnace and a Fluid-Bed Furnace'; that the Flemish Government Decree of 23.3.1989 requires an environmental impact report to be compiled for an environmental licence application for "an installation for the destruction by incineration or chemical conversion of industrial waste, ... , with an annual capacity of 25 000 tonnes or more"; that this Environmental Impact Report discusses the environmental impacts of setting up a third grid furnace for incineration of domestic and non-hazardous industrial waste and of setting up a fluid-bed furnace for incinerating waste in the form of sludge; that these are quite large industrial facilities which, however, are provided with extensive mitigating measures concerning all environmental aspects; that the extension will equip the two existing grid furnaces with an additional flue gas cleaning stage; that operating the incineration furnace releases no wastewater; that the necessary steps are taken to prevent or catch leaks into the soil and groundwater, so that no significant effects can be expected on surface water or groundwater; that the noise emissions are based on prognoses of acoustic capacity levels



of the planned installations; that, provided the installations meet these expected noise emission levels, all guideline values in the surrounding area should be respected; that no relevant nuisance is expected from noise; that the atmospheric emissions are estimated on ten counts; that two counts (NO<sub>x</sub> and SO<sub>2</sub>) will have a relevant or significant impact on ambient air quality; that the other pollutants, when dispersed into the atmosphere, have no significant environmental impact; that equipping the two existing grid furnaces with more thorough flue gas cleaning will reduce the environmental impact of SO<sub>2</sub> from INDAVER B as a whole in future; that the future environmental impact will still be important, though limited to the immediate vicinity; that NO<sub>x</sub> emission from INDAVER B as a whole will increase; that INDAVER B will cause immission concentrations in the immediate vicinity which amount to more than half the global air quality targets; that this is the only count on which INDAVER B will have a relevant future environmental impact on the right bank of the Scheldt as far as the residential nucleus of Doel;

Having regard to the ordinance of 28.6.1985 concerning the environmental licence, amended by orders of 7.2.1990, 12.12.1990, 21.12.1990, 22.12.1993, 21.12.1994 and 8.7.1996;

Having regard to the Flemish Government decree of 6.2.1991 establishing the Flemish Environmental Licensing Regulations (VLAREM I), amended by Flemish Government decrees of 27.2.1992, 28.10.1992, 27.4.1994, 1.6.1995 and 26.6.1996:

- On the question of where dioxins are deposited, it is stated that the exact location is hard to predict: given the prevailing wind direction (SW), they are deposited in the Scheldt;
- Combustion takes place with maximum energy recovery: at present energy is released in the form of electricity, and the possibility of steam generation is also under consideration;
- The company is having research carried out into new techniques including chemical decomposition, thermolysis and pyrolysis; and
- Explanation of the term 'co-incineration of waste substances';

Having regard to the FAVOURABLE recommendation of the Mayor and Aldermen of BEVEREN dated 26.1.1998;

Having regard to the FAVOURABLE recommendation of the Environmental Licensing Section of the Environmental, Conservation and Land Use Authority of the Department of the Environment and Infrastructure dated 23.1.1998;

Having regard to the FAVOURABLE recommendation of the Town Planning Section of the Town Planning, Housing and Monument Preservation Authority of the Department of the Environment and Infrastructure dated 26.11.1997;

Having regard to the FAVOURABLE recommendation of the Preventive and Social Healthcare Section of the Healthcare Authority of the Department of Welfare, Public Health and Culture dated 19.1.1998;

Having regard to the FAVOURABLE recommendation of the Flemish Environmental Company dated 21.1.1998;

Having regard to the FAVOURABLE recommendation of the Flanders Regional Public Waste Company dated 26.1.1998;

Having regard to the FAVOURABLE recommendation of the Provincial Environmental Expert dated 17.2.1998;

Having regard to the hearing of the company's representatives on 24.2.1998, who stated that the application relates to an extra 100 000 tonnes/year; and that, since revision of the Environmental Impact Report to 150 000 tonnes/year, a further extension application is to follow;

Having regard to the FAVOURABLE recommendation of the Provincial Environmental Licensing Committee dated 24.2.1998 and valid until the expiry date of the basic licence,

namely 12.11.2012, under the conditions co-ordinated by the Provincial Environmental Expert;

Having regard to the decision dated 12.2.1998 of the Permanent Delegation of the Provincial Council to extend the time of processing of the environmental licence;

Having regard to the Flemish Government decree dated 1.6.1995 containing general and sector-specific environmental health provisions (VLAREM II), as amended by Flemish Government decrees of 6.9.1995, 26.6.1996 and 3.6.1997;

Having regard to the decree of 5.4.1995 containing general environmental policy conditions amended by ordinance of 19.4.1995;

Having regard to the European, Belgian federal and regional regulations applicable to facilities which cause nuisance;

Having regard to the application submitted on 20.11.1997 by NV INDAVER B, a limited company, of Poldervlietweg, ANTWERP 3 (Social Security Register no. 87159527751/VAT no. 442839147) for an environmental licence for a facility located at Molenweg – Haven 1940, 9130 BEVEREN, on the plots identified in the Land Register as BEVEREN Division 8, Section A, plot nos. 100/b and 100/c, the subject of which is addition of a third grid furnace (headings: 2.3.4.a, 2.3.4.b, 2.3.4.c.3, 2.3.4.e, 2.3.4.f, 2.3.4.g, 2.3.4.j, 12.1.2, 39.1.3 and 39.5.1);

Considering that the application only concerns the headings which constitute an addition resulting from installation of the third grid furnace; that an application for regulation of grid furnaces 1 and 2 and dependencies was allowed and fully explained on 6.11.1997 and discussed in the Provincial Environmental Licensing Committee on 3.2.1998;

Considering that headings 2.3.4.a and 2.3.4.b have been deleted from the scope of the application, as these activities are already covered by heading 2.3.4.j;

Having regard to the registered letter of 27.11.1997 which declared the environmental licence application admissible and complete;

Having regard to the documents certifying that the environmental licence application received the required publicity in accordance with Article 17 of the Flemish Environmental Licensing Regulations;

Having regard to the minutes dated 5.1.1998 containing the written and verbal objections and comments made at the public inquiry, including one objection and comment asking why a process of thermolysis was not used as an alternative to a grid furnace; and considering that comparisons make it clear that this is a better existing technology than the grid furnace in terms both of environmental performance and the quantity of residual waste; and that the report of the information meeting of 17.12.1997 shows that the following comments arose:

- in future waste substances will also be brought in by ship;
- the emission limits are amply respected;

Considering that, according to the Sint-Niklaas-Lokeren Regional Plan, the facility is located in an industrial area; that the establishment is located in a port area to the north of central Antwerp on the left bank of the Scheldt, between the Liefkenshoek tunnel and the residential nucleus of Doel; that a facility for processing waste substances containing mercury is currently operational on the company site; that, besides, the tip site has been cleared for use and the two licensed grid furnaces have recently been brought into service; that the planned additional grid furnace will be constructed in a manner in every way similar to the two existing grid furnaces; that the structure to which the three grid furnaces belong will outwardly form an interconnected whole; that each furnace line works independently from the other lines; that a number of facilities are, however, in common; that one waste bunker will be used for the three furnaces; that the third furnace will be run with the existing infrastructure (a gantry crane); and that the procedure can be summarised as follows:

After weighing on the weighbridge, the freight wagons tip their loads of waste through one of six tip openings into the tip shed. The waste is collected in the waste bunker. This is a big concrete space used for temporary storage of waste at weekends and to tide over facility shutdowns. Here the delivered waste is mixed, to make the composition of the waste input as homogeneous as possible. Coarse refuse is run through a reduction unit incorporated in the sixth tip opening. Large pieces of waste can be taken from the waste bunker to the reduction unit by means of the bunker crane. The waste bunker can store a total waste volume of 11 600 m<sup>3</sup>.

The waste bunker is equipped with two identical grab cranes which mainly perform three functions: keeping the tip openings clear, mixing the waste and placing it in the waste feed hopper.

The waste feed hopper leads to a shaft which discharges on to a batching table. A batching plunger moves over this table and presses the waste on to the incineration grid. Waste is placed over the full width of the grid.

The grid consists of grille elements arranged alongside each other in rows. The waste burns on the grid, the solid residual products (slag) fall off the grid into the wet slag remover and the gaseous residual products are conducted into the post-incineration chamber. Grid movement is adapted to burn-out quality. Material which falls through the grid is returned to the bunker.

Considering that the Environmental Impact Report discusses both the erection of a third grid furnace and of a fluid-bed furnace; that the application itself is limited to the addition of one grid furnace and that, accordingly, only the effects of the grid furnace are examined;

Considering that the main waste substances released in the incineration process are (for the three furnace lines together):

- Slag: 105 000 tonnes/year;

- Boiler ash: 3 300 tonnes/year; and
- Fly ash + flue gas cleaning residue: 19 200 tonnes/year;

that the usable residue produced by the incineration and processing facility is taken away and used elsewhere as raw material; that residual products which can no longer be used are dumped at one of Indaver's dumps; that it may be commented at this point that there is an ongoing search for methods of reducing residual waste; that tests are currently being conducted with a slag processing unit which, for example, will remove ferrous and non-ferrous metals from slag so that they can be sold as scrap; that the principle of co-incineration is also followed; that production residues with little or no contamination, such as plastic or carpet, are processed to serve as an alternative to fossil fuels in certain sectors (cement and lime kilns and the blast furnace industry); that a number of waste substances (pallets, scrap metal, office waste, packing waste etc.) are removed externally when the company has no suitable processing method/useful application available; that if one of the three furnaces is out of order, there is sufficient bunker capacity for 14 days; and that, if necessary, the supply of waste substances can be halted or the waste taken to other licensed incineration furnaces/dumps;

Considering that the facility is already licensed to discharge 2 m<sup>3</sup>/day of domestic wastewater into surface water; that industrial wastewater is not discharged and any residual water flows are fully recovered;

Considering that all locations where contaminated substances may occur on or in the soil (loading, unloading and storage positions and ground under pipes) lie in a building or over a hard surface; that the necessary provisions are in place to catch pollutants in the event of leaks; that the risks of drainage into the soil and groundwater are kept to a minimum; that flue gas deposits make it possible that the soil will be enriched by micropollutants; that the maximum expected contribution of all Indaver's facilities to the depositing of heavy metals over 20 years is 1.36 kg/ha; that the top 5 cm layer of 1 ha of standard soil, with heavy metal contents equal to the VLAREM background figures, contains a total mass of about 81 kg of heavy metals; that the maximum expected

contribution is thus no more than 1.7% of the mass of heavy metals present in a standard soil which complies with the VLAREM background values;

that the site is located in a recently reclaimed area; that both the reclaimed soil and the groundwater are salty; that local high hydrocarbon contents are found in the soil and there are traces of chlorinated hydrocarbons in the phreatic groundwater; and that the Environmental Impact Report states that implementing the project will create no incidental effects on groundwater;

Considering that the noise climate has been studied by two batteries of noise measurements conducted at three measuring positions each over a whole week; that the acoustic capacity levels of the different facilities and components are estimated on the basis of earlier prognoses, measurements and calculations at similar facilities; that the specific contribution of grid furnace 3 and the fluid-bed furnace, 200 m from the company boundary, fluctuates between 39 and 46 dB(A); that setting up the third grid furnace, the fluid-bed furnace (not included in the application) and the related superchargers cause a rise in ambient noise to 54 dB(A) at measurement points 1 and 2 and to 49 dB(A) at measurement point 3; that the VLAREM guide values (60/55/55) are not exceeded at the measuring points; that it should be noted here that the specific contributions are based on prognoses of acoustic capacity levels and that the design and/or construction of the various facilities should pay the necessary attention to limiting noise levels to the set values;

Considering that the tipping shed and bunker are kept below atmospheric pressure to limit the nuisance from smell; that good homogenization of the waste pre-incineration gives a more stable combustion process with lower resultant flue gas emissions; that each furnace line is provided with semi-dry flue gas cleaning consisting of:

- A spray reactor with injection of lime milk, active carbon and water originating from the dirty water circuit and wet flue gas cleaning;
- Dry bag filter;
- Induced draught fan.

A common wet flue gas cleaning system will be installed for the three lines, consisting of:

- An acid trap with water injection; and
- A neutral trap with lime milk injection;

that the cleaned gases are released via the two existing chimneys; that installing the wet flue gas cleaning unit will reduce the output of a number of parameters (HCl, HF, dust, SO<sub>2</sub> and heavy metals); that only the output of CO increases almost proportionately; and that the output of dioxins remains below the standard of 0.1 ng TEQ/Nm<sup>3</sup>;

Considering that the Domestic Waste Executive Plan for 1997 – 2001, and specifically the “Removal” section, approved by the Flemish Government on 19.12.1997, includes a programme for the necessary thermal processing capacity in Flanders; that this Executive Plan proves a need to achieve at least 700 000 tonnes/year of additional incineration capacity; that the plan then states that one way of meeting this additional capacity is to expand the Indaver B incineration facility at Beveren by a capacity of 150 000 tonnes/year; that it can therefore be stated that today’s demand falls within the scope of execution of the Domestic Waste Executive Plan for 1997 – 2001;

Considering that, in accordance with Article 43 paragraph 2 of the Flemish Environmental Licensing Regulations, the operator should always take every step to avoid damage and nuisance;

Considering that the licensing government, in accordance with Article 20 of the Environmental Licensing Ordinance, without prejudice to the provisions of the same laws, ordinances and implementing decrees, may set special conditions for issue of a licence, with a view to protecting people and the environment;

Considering that, in the light of the foregoing, it can be said that the risks to external safety, the nuisance, and the impact on the environment, waters, nature and the human



population outside the facility can be kept to an acceptable level by compliance with the environmental conditions set in the present decree;

Considering that the requested operation is compatible with the immediate environment in terms of environmental health and town and country planning; and that consequently the requested licence can be granted;

Considering that the Domestic Waste Executive Plan for 1997 – 2001 requires formation of a provincial consultative forum about domestic waste disposal, in which the province, OVAM, the municipalities, the inter-municipal bodies concerned and the Flemish Environmental Holding Company participate; that this consultative forum has been established in accordance with Article 16 §6 of the amended waste ordinance of 2.7.1981 which makes the provinces responsible in their basic territories for co-ordinating implementation of the plans made by regions and groupings of regions; that, even then, the licence can only be granted provided that the provincial co-ordination required by the ordinance is guaranteed to function;

Having heard the report of Mr Paul Wille, a member of the Permanent Delegation;

now therefore it is decreed as follows:

**Article 1:** NV INDAVER B, of Poldervlietweg, 2030 Antwerp 3 is hereby granted a licence to operate a facility located on the plots identified in the Land Register as BEVEREN Division 8, Section A, plot nos. 100/b and 100/c at Molenweg – Haven 1940 in BEVEREN, the subject of which is addition of a third grid furnace.

Headings:

**2.3.4.c.3 (1)**

Storage and incineration of used oil which meets the composition criteria set in the conditions for installations for the storage and processing of used oil, in an installation with a nominal thermal capacity of approximately 40 MW per furnace line.

**2.3.4.e (1)**

Storage and incineration of non-hazardous domestic waste.

**2.3.4.f (1)**

Storage and incineration of non-hazardous industrial waste similar to domestic waste.

**2.3.4.g (1)**

Storage and incineration of solid medical waste which does not pose a risk.

**2.3.4.j (1)**

Storage and incineration of other non-hazardous waste.

The total incineration capacity shall be extended by 100 000 tonnes/year to 300 000 tonnes/year.

**12.1.2 (1)**

Two turbines of 19 MW and 8 MW capacity respectively (an extra 8 MW).

**39.1.3 (1)**

Three steam boilers, each of 80 000 litres capacity (an extra 80 000 l).

**39.5.1 (2)**

Two steam turbines of electric capacity 19 MW and 8 MW respectively (an extra 8 MW).

**Article 2:** the environmental licence shall be granted until the end of the basic licence, namely 12.11.2012.

**Article 3:** this environmental licence shall be conditional upon strict compliance with the following conditions of operation:

**A. General environmental conditions**

1. VLAREM V01: General Environmental Conditions – general (Annexe 1);
2. VLAREM V02: General Environmental Conditions – noise (Annexe 2);
3. VLAREM V05: General Environmental Conditions – air (Annexe 3);
4. VLAREM V06: Annual Emissions Report (Annexe 4);

**B. Industry-specific environmental requirements**

5. VLAREM V07: Waste Processing Facilities – general (Annexe 5);
6. VLAREM V20: a) Domestic Waste Incineration Facilities (Annexe 6);

7. VLAREM V35: Electricity (Annexe 7);
8. VLAREM V81: Steam Appliances (Annexe 8);

**C. Special environmental conditions**

9. For safety purposes, the company should always keep a register at the disposal of the local fire brigade.

This register should contain the following data:

- Exact location within the complete company structure where all products present are stored;
- Quantities of stored products at each location;
- Chemical/identifiable names of stored products at each location;

The fire brigade and municipal environmental protection department shall determine how this register should be provided.

10. Only waste substances which cannot be considered for material recycling shall be processed in the installation.
11. Used oil shall not be used as an auxiliary fuel for starting and stopping the grid furnaces.
12. The special environmental conditions set in the decree of the Permanent Delegation of 29.6.1995 shall continue in force unless they conflict with the above provisions.
13. The functioning of the co-ordination by the provincial consultative forum concerning the disposal of domestic waste, as provided in Article 16 §6 of the decree of 2.7.1981 concerning waste avoidance and management and in the Domestic Waste Executive Plan 1997 – 2001 shall also be guaranteed in relation to this facility.

**Article 4:**

Paragraph 1: the facility licensed in Article 1 shall be brought into service within a period of no more than three years to be counted from the date of the present environmental licence.

Paragraph 2: as the facility covered by the licence granted in Article 1 requires a building licence under the Town and Country Planning Organisation Act of 29.3.1962, the present

environmental licence shall be suspended until such a building licence has definitively been granted. The date of commencement of the term of the present environmental licence shall be postponed until the date of definitive granting of this building licence. Using registered mail, the operator shall advise the government which issued the environmental licence of the date of granting of the building licence.

Paragraph 3: if the building licence mentioned in paragraph 2 is refused, the environmental licence of Article 1 shall legally lapse on the date of refusal of the building licence mentioned in the last paragraph.

**Article 5:** the present licence shall not prejudice the rights of third parties.

**Article 6:**

Paragraph 1: every modification to the licensed installation shall form the subject of a supplementary licence application.

Paragraph 2: any takeover of the installation by another operator shall be notified to the licensing government within ten calendar days of the takeover date, as provided in Article 42 of the Flemish Environmental Licensing Regulations.

Paragraph 3: in accordance with the provisions of the Flemish Environmental Licensing Regulations, a renewal of the licence shall be applied for between the eighteenth and the twelfth month before expiry of the term of the current licence.

**Article 7:** a certified copy of this decision, with a certificate of the date of posting, shall be sent to:

- the operator;
- the Mayor and Aldermen of BEVEREN;
- the Provincial Environmental Licensing Committee;
- the Environmental Licensing Section of the Environment, Conservation and Land Use Authority of the Department of the Environment and Infrastructure;
- the Town Planning Section of the Town Planning, Housing and Monument Preservation Authority of the Department of the Environment and Infrastructure;

- the Preventive and Social Healthcare Section of the Healthcare Authority of the Department of Welfare, Public Health and Infrastructure;
- the Environmental Inspection Section of the Environment, Conservation and Land Use Authority of the Department of Environment and Infrastructure;
- the Public Waste Company for the Flemish Region;
- the Flemish Environment Company;
- the Technical Inspectorate of the Occupational Safety Authority of the Ministry of Employment and Labour;
- NV AQUAFIN; and
- the Committee for Safety, Health and Workstation Improvement.

An identical copy shall be sent to the authorised mayor with the request to make the decision known, as provided in Section IX of the Flemish Environmental Licensing Regulations.

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# Appendix 6

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Translation from Dutch

**Province of East Flanders**

Env. Lic. for Grid Furnace 3 + 50 000 tonnes

8th Directorate  
Department 82  
Environmental Health

## **Decree of the Permanent Delegation**

in the presence of:

Herman Balthazar, Governor and Chairman,  
of the following members:

Alexander Vercamer

Ivan Verleyen

Jean-Pierre Van Der Meiren

Guido De Padt

Arie Abbeloos

and of Albert De Smet, Provincial Registrar.

Reference: 46003/233/A/5/PV/mp

Concerning: INDAVER B

BEVEREN

Rapporteur: Mr Guido De Padt

**Decree of the Permanent Delegation of the Provincial Council granting a licence to NV INDAVER B, of Poldervlietweg, ANTWERP 3, to operate grid furnaces located on the plots identified in the Land Register under BEVEREN Division 8, Section A, plot no(s). 100/B and 100/C, at Molenweg – Haven 1940 in BEVEREN.**

The Permanent Delegation,

Having regard to the ordinance of 28.6.1985 concerning the environmental licence, amended by orders of 7.2.1990, 12.12.1990, 21.12.1990, 22.12.1993, 21.12.1994 and 8.7.1996;

Having regard to the Flemish Government decree of 6.2.1991 establishing the Flemish Environmental Licensing Regulations (VLAREM I), concerning the environmental licence, amended by Flemish Government decrees of 27.2.1992, 28.10.1992, 27.4.1994, 1.6.1995 and 26.6.1996;

Having regard to the Flemish Government decree dated 1.6.1995 containing general and sector-specific environmental health provisions (VLAREM II), as amended by Flemish Government decrees of 6.9.1995, 26.6.1996 and 3.6.1997;

Having regard to the decree of 5.4.1995 containing general environmental policy conditions amended by ordinance of 19.4.1995;

Having regard to the European, Belgian federal and regional regulations applicable to facilities which cause nuisance;

Having regard to the following current environmental licences in connection with the operation of this facility which causes nuisance:

- Decree of the Permanent Delegation dated 12.11.1992 (20 years): operation of a processing unit for lights and batteries containing mercury, consisting of two parts: a breaker and sorter installation;
- Ministerial Decree of 14.6.1993: amendment of Permanent Delegation's decree of 12.11.1992;
- Ministerial Decree of 10.1.1994: amendment of Permanent Delegation's decree of 12.11.1992;
- Decree of the Permanent Delegation of 29.6.1995 (valid till 12.11.2012): operation of a grid furnace (waste incineration facility);
- Decree of the Permanent Delegation of 28.9.1995 (valid till 12.11.2012): extension of the grid furnace;
- Decree of the Permanent Delegation of 28.9.1995 (valid till 12.11.2012): operation of peripheral infrastructure;
- Decree of the Permanent Delegation of 14.3.1996 (valid till 14.3.2006): operation of a category 1 tip site;
- Decree of the Permanent Delegation of 7.5.1997 (valid till 12.11.2012): storage and mechanical handling of non-hazardous waste with a storage capacity of 3000 tonnes for waste to be processed and 1680 tonnes of processed waste; drainage of domestic wastewater via a septic tank into surface water;



- Decree of the Permanent Delegation of 7.5.1998 (valid till 12.11.2012): addition of a third grid furnace and adjustment of steam boiler and turbines;
- Decree of the Permanent Delegation of 15.10.1998 (valid till 12.11.2012): addition of a mobile deferrization unit;

Having regard to the application submitted on 30.10.1998 by NV INDAVER B, a limited company, of Poldervlietweg, ANTWERP 3 (Social Security Register no. 87159527751/VAT no. 442839147) for an environmental licence for a facility located at Molenweg – Haven 1940, 9130 BEVEREN, on the plots identified in the Land Register as BEVEREN Division 8, Section A, plot nos. 100/B and 100/C, the subject of which is a grid furnace (headings: 2.3.4.c.3, 2.3.4.e, 2.3.4.f, 2.3.4.g, 2.3.4.j, 12.1.2, 16.3.2.3, 31.1.1, 39.1.3 and 39.5.2);

Considering that the application is accompanied by an Environmental Impact Report, ruled in order on 24.6.1997, the conformity code of which is CAH/97/311 and the title of which is “Environmental Impact Report on the Set-Up of a Grid Furnace and a Fluid-Bed Furnace” and an evaluation of the Environmental Impact Report with a view to increasing the incineration capacity of the planned third grid furnace from 100 000 tonnes/year to 150 000 tonnes/year; that the evaluation report was ruled in order on 15.5.1998 under conformity code CAH/98/355; and that the Flemish Government Decree of 23.3.1989 requires an environmental impact report to be compiled for an environmental licence application for “an installation for the destruction by incineration or chemical conversion of industrial waste, ... , with an annual capacity of 25 000 tonnes or more”;

Considering that the processing capacity of the planned third grid furnace will be increased to 150 000 tonnes/year; that the increase of incineration capacity (50 000 tonnes/year) in fact itself requires an Environmental Impact Report; because another Environmental Impact Report has recently been prepared for the facilities already licensed; considering that recognised environmental impact reporting experts, who also contributed to the Environmental Impact Report, have compiled a report evaluating the

application received; that the evaluation report is therefore an essential supplement to the Environmental Impact Report, and both reports in fact constitute a whole; that the evaluation report states the points which are modified by the data from the Environmental Impact Report, as a result of the planned capacity increase, specifically the **emissions and their environmental impacts**; and that these modifications occur especially in the air, noise and traffic sections;

Considering that the evaluation report finally states that the planned additional capacity will not entail any significant incidental detriment to the environment;

Having regard to the registered letter of 5.11.1998 which declared the environmental licence application admissible and complete;

Having regard to the documents certifying that the environmental licence application received the required publicity in accordance with Article 17 of the Flemish Environmental Licensing Regulations;

Having regard to the minutes dated 21.12.1998 containing the written and verbal objections and comments made at the public inquiry, from which it is apparent that no objections were submitted;

Having regard to the FAVOURABLE recommendation of the Mayor and Aldermen of BEVEREN dated 21.12.1998;

Having regard to the FAVOURABLE recommendation of the Environmental Licensing Section of the Environmental, Conservation and Land Use Authority of the Department of the Environment and Infrastructure dated 17.12.1998;

Having regard to the FAVOURABLE recommendation of the Town Planning Section of the Town Planning, Housing and Monument Preservation Authority of the Department of the Environment and Infrastructure dated 2.12.1998;

Having regard to the FAVOURABLE recommendation of the Preventive and Social Healthcare Section of the Healthcare Authority of the Department of Welfare, Public Health and Culture dated 7.1.1999;

Having regard to the FAVOURABLE recommendation of the Flemish Environmental Company dated 8.1.1999;

Having regard to the FAVOURABLE recommendation of the Public Waste Company for the Flemish Region (OVAM) dated 18.12.1998;

Having regard to the FAVOURABLE recommendation of the Provincial Environmental Expert dated 15.1.1999;

Having regard to the FAVOURABLE recommendation of the Provincial Environmental Licensing Committee dated 26.1.1999;

Having regard to the hearing of the company's representatives by the Provincial Environmental Licensing Committee, at which they noted the Committee's recommendation;

Having regard to the decision dated 21.1.1999 of the Permanent Delegation of the Provincial Council to extend the time of processing of the environmental licence;

Considering that, according to the Sint-Niklaas-Lokeren Regional Plan, the facility is located in an industrial area and specifically on an industrial site on the left bank of the Scheldt, between the Liefkenshoek tunnel and the residential nucleus of Doel; and that the operation complies with the designated purpose in accordance with town planning;

Considering that the present environmental licence application relates to the addition of 50 000 tonnes/year to the licensed incineration capacity, making a total of 350 000

tonnes/year, and that the nature and composition of the waste substances remain unchanged; that grid furnaces 1 and 2, which are already working, each have a processing capacity of 100 000 tonnes per year; and that the third furnace increases this to 150 000 tonnes per year;

Considering that the planned addition is covered by the “**Domestic Waste Executive Plan for 1997 – 2001**”, Part 3, Section 3, Sub-Section 3.3 of which, entitled “Programming of disposal and incineration capacity for 1997 – 2001” provides, in paragraph 3.3.4 “Actions”, that the expansion of capacity to 350 000 tonnes will have to be implemented at the Beveren incineration facility in 2000;

Considering that the increased capacity will largely be provided by the third furnace line, which will therefore have to undergo certain modifications; that the additional incineration capacity will also be used to optimise supply to the other lines, given that distribution of the total incineration capacity over three lines is essential to achieve optimum and guaranteed operation;

Considering that the main waste substances released in the combustion process for the 350 000 tonnes/year to be licensed are:

- Slag: 122 500 tonnes/year;
- Boiler ash: 4050 tonnes/year; and
- Fly ash + flue gas cleaning residue: 30 000 tonnes/year;

that the storage site for boiler ash is being expanded by 30 m<sup>3</sup> and will amount to 60 m<sup>3</sup> from now on; that the usable residual production from the incineration and processing installations is taken away and used elsewhere as raw material; that the other production is dumped at one of Indaver’s dumps; and that Indaver is making the necessary effort in the matter of waste management;

Considering that the facility is licensed to discharge 2 m<sup>3</sup>/day of domestic wastewater into surface water; that no industrial wastewater is discharged; and that any residual water flows are fully recovered;

Considering that the whole facility is built on a base impermeable to fluids and surrounded by the necessary collecting drains, which discharges into a collecting tank from where possibly contaminated water is processed at the facility itself; that all locations where contaminated substances may occur are in a building or above a hard surface; and that the storage and use of the liquids present which are potential soil pollutants take place in drums provided for the purpose;

Considering that recent measurements have shown that the prognosis of total acoustic capacity of grid furnaces I and II was correct, but that the position of the source has altered slightly so that, among other things, the specific contributions at the different positions in the surroundings will change; that, as the capacity of grid furnace III has been changed, the prognosis of total acoustic capacity from this will also change in relation to the one given in the original Environmental Impact Report; that the evaluation report shows that the permitted limit of 50 dB(A) is not exceeded 200 m from the company perimeter; that the guide values (60/55/55) are nowhere exceeded; that the calculation of the specific contributions ignored any reductions resulting from screening by certain buildings; that the calculated values in practice will be somewhat lower; that installation of the fluid-bed furnace was allowed for in the calculation of noise from the facility, and no application for this has yet been submitted;

Considering that the additional traffic resulting from the additional capacity will not give rise to structural traffic problems;

Considering that a number of provisions minimise the atmospheric pollution caused by the facility; that the Environmental Impact Report examined the assessment of the additional capacity on atmospheric emissions and immissions; that the expected emissions from the third grid furnace still meet the limit values in force; that the emission concentrations of SO<sub>2</sub>, HCL, dust and heavy metals (except Cd, Tl and Hg) attributable to Indaver B are limited or negligible; that the same applies to HF, CO, TOC, dioxin, Cd, Tl and Hg; that, in the supplementary Environmental Impact Report, there is no change to

the decisions concerning toxicological effects, because these effects do not significantly change as a result of the atmospheric emissions;

Considering that INDAVER B's atmospheric emissions only have an impact on the wider environment in terms of NO<sub>x</sub> and SO<sub>2</sub>; that the immission concentrations of these pollutants only rise slightly due to the increased capacity of the third grid furnace, so that, at the Dutch border, the contribution to any environmental impacts is still negligible;

Considering that the grid furnaces work continuously; that there is ongoing monitoring by a permanent crane operator or other shift staff; that fire may occur spontaneously in a waste bunker; that in such cases the smoking point will be covered with waste by a small grab and the entire smouldering sludge will be dumped in the feed hopper; that every position in the building is readily accessible; that roof hatches are provided which permit smoke evacuation in emergencies and which open automatically when a fire is detected; that a firefighting main is provided with a sufficient number of hydrants and reels; that the firefighting main is supplied by the general extinguishing main of the entire Indaver establishment; that a water jet system is provided in the bunker and feed hopper (manually operated); that the bunker space is also equipped with a number of water cannons; that the feed hopper is equipped with a shutoff valve which is closed in the event of fire in the hopper;

Considering that, in accordance with Article 43 paragraph 2 of the Flemish Environmental Licensing Regulations, the operator should always take every step to avoid damage and nuisance;

Considering that the licensing government, in accordance with Article 20 of the Environmental Licensing Ordinance, without prejudice to the provisions of the same laws, ordinances and implementing decrees, may impose special conditions for issue of a licence, with a view to protecting people and the environment;

Considering that, in the light of the foregoing, it can be said that the risks to external safety, the nuisance and the impacts on the environment, waters, nature and the human population outside the facility can be kept to an acceptable level by compliance with the environmental conditions set in the present decree;

Considering that the requested operation is compatible with the immediate environment in terms of environmental health and town and country planning; and that consequently the requested licence can be granted;

Having heard the report of Mr Guido De Padt, a member of the Permanent Delegation;

now therefore it is decreed as follows:

**Article 1:** NV INDAVER B, of Poldervlietweg, 2030 ANTWERP, is hereby granted a licence to operate a facility located on the plots identified in the Land Register as BEVEREN Division 8, Section A, plot nos. 100/B and 100/C at Molenweg – Haven 1940 in BEVEREN, the subject of which is modification (increased incineration capacity and expansion) of the third grid furnace of a facility licensed for waste incineration, comprising:

**2.3.4.c.3 (1), 2.3.4.e (1), 2.3.4.f (1), 2.3.4.g (1) and 2.3.4.j (1)**

The total incineration capacity shall be extended by 50 000 tonnes/year to a total incineration capacity of 150 000 tonnes/year. After the increase, the total incineration capacity of the facility (three furnace lines) shall be 350 000 tonnes/year, with the following incineration capacity per line:

- Lines 1 and 2: rated 13.3 tonnes/hour and maximum 15 tonnes/hour
- Line 3: rated 20 tonnes/ hour and maximum 22 tonnes/hour.

**12.1.2 (1)**

Expansion of rated capacity of a turbine to 14 MW (i.e. an increase of 6 MW).

**16.3.2.3 (1)**

Addition of a 150 kW compressor, making a total installed electric power of 600 kW (4 x 150 kW).

**31.1.1 (2)**

Addition of an emergency diesel (50 kW) and a diesel for the water supply pump (160 kW).

**39.1.3 (1)**

Expansion of the water capacity of the steam boiler to 120 000 litres (i.e. an extra 40 000 l).

**39.5.2 (1)**

Expansion of the electric power of the steam turbine to 14 MW (i.e. an extra 6 MW).  
The thermal capacity is increased from 32 MW to 48 MW.

**Article 2:** the environmental licence shall be granted until the date of expiry of the basic licence, issued by the Permanent Delegation on 12.11.1992, i.e. until 12.11.2012.

**Article 3:** this environmental licence shall be conditional upon strict compliance with the following conditions of operation:

The environmental conditions of past environmental licences, especially those relating to the operation of the grid furnaces – i.e. the decrees of the Permanent Delegation of 29.6.1995, 28.9.1995 and 7.5.1998 - shall remain in force unaltered.

**Article 4:**

Paragraph 1: the facility licensed in Article 1 shall be brought into service within a period of no more than three years to be counted from the date of the present environmental licence.

Paragraph 2: as the facility covered by the licence granted in Article 1 requires a building licence under the Town and Country Planning Organisation Act of 29.3.1962, the present environmental licence shall be suspended until such a building licence has definitively been granted. The date of commencement of the term of the present environmental



licence shall be postponed until the date of definitive granting of this building licence. Using registered mail, the operator shall advise the government which issued the environmental licence of the date of granting of the building licence.

Paragraph 3: if the building licence mentioned in paragraph 2 is refused, the environmental licence of Article 1 shall legally lapse on the date of refusal of the building licence mentioned in the last paragraph.

**Article 5:** the present licence shall not prejudice the rights of third parties.

**Article 6:**

Paragraph 1: every modification to the licensed facility shall form the subject of a supplementary licence application.

Paragraph 2: any takeover of the installation by another operator shall be notified to the licensing government within ten calendar days of the takeover date, as provided in Article 42 of the Flemish Environmental Licensing Regulations.

Paragraph 3: in accordance with the provisions of the Flemish Environmental Licensing Regulations, a renewal of the licence shall be applied for between the eighteenth and the twelfth month before expiry of the term of the current licence.

**Article 7:** a certified copy of this decision, with a certificate of the date of posting, shall be sent to:

- the operator;
- the Mayor and Aldermen of BEVEREN;
- the Provincial Environmental Licensing Committee;
- the Environmental Licensing Section of the Environment, Conservation and Land Use Authority of the Department of the Environment and Infrastructure;
- the Town Planning Section of the Town Planning, Housing and Monument Preservation Authority of the Department of the Environment and Infrastructure;
- the Preventive and Social Healthcare Section of the Healthcare Authority of the Department of Welfare, Public Health and Culture;
- the Environmental Inspection Section of the Environment, Conservation and Land Use Authority of the Department of the Environment and Infrastructure;

- the Public Waste Company for the Flemish Region;
- the Flemish Environment Company;
- the Technical Inspectorate of the Occupational Safety Authority of the Ministry of Employment and Labour;
- NV AQUAFIN; and
- the Committee for Safety, Health and Workplace Improvement.

An identical copy shall be sent to the authorised mayor with the request to make the decision known, as provided in Section IX of the Flemish Environmental Licensing Regulations.

**Article 8:** an appeal may be made to the Flemish Government, represented by the Community Minister of the Environment, Conservation and Land Use, c/o Environment, Conservation and Land Use Authority, Environmental Licensing Management, Belliardstraat 14 – 18, 1040 Brussels, in accordance with the methods and terms described in the Flemish Environmental Licensing Regulations, and subject to payment of the prescribed file tax.

Ghent, 11 March 1999

On behalf of the Permanent Delegation:

Provincial Registrar

Governor and Chairman

Signed Albert De Smet

Signed Herman Balthazar

Certified a true copy.

On behalf of the Provincial Registrar

The authorised officer

[Signed]

Raf. Barzeele

Head of Department

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[Stamped]

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# Appendix

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MLAVI/9800000485

N.V. Indaver

NaOH solution

- 4 silos with a total capacity of 236 m<sup>3</sup> for CaO
- 10 tanks with a total capacity of 25.5 m<sup>3</sup> for CaO solution
- 5 tanks with a total capacity of 16.85 m<sup>3</sup> for HCl solution
- 2 tanks with a total capacity of 5.5 m<sup>3</sup> for iron trichloride solution
- the storage of 10 m<sup>3</sup> TMT-15 in drums and in a 4 m<sup>3</sup> tank
- 2 tanks with a total capacity of 24 m<sup>3</sup> for sodium thiosulphate
- the storage of diesel in 2 tanks with a total capacity of 100 m<sup>3</sup> and 3 m<sup>3</sup> respectively and the storage of 0.3 m<sup>3</sup> diesel in drums
- the storage of 3 m<sup>3</sup> steam additives, 2 m<sup>3</sup> polyelectrolyte and 5 m<sup>3</sup> miscellaneous chemicals
- the storage of various gases in movable containers (approx. 2.8 m<sup>3</sup>);

Static furnace: (2.3.4./j, k and 17.2.1.1)

A waste incinerator for liquid and gaseous halogenated hydrocarbons and for chlorinated or brominated hydrofluorocarbons with a capacity of approx. 1 tonne waste per hour and with a nominal thermal capacity of approx. 5 MW. The total installed capacity for pumps, fans, mixers, compressors, etc. is approx. 430 kW. The installation includes a CFC evaporation unit, a quenching tower, gas scrubbers, dust filters and a neutralisation unit for treatment of scrubbing water.

The static furnace is also equipped with the following storage facilities:

- a) waste substances: (see also section 17)
  - 2 tanks of 100 m<sup>3</sup> each for liquid waste
  - a tank with a water capacity of 3.1 m<sup>3</sup> for freons:
- b) raw materials: (quantities contained in section 16 and 17):
  - a 60 m<sup>3</sup> silo for CaO
  - 4 tanks with a total capacity of 2.6 m<sup>3</sup> for CaO solution
  - 2 tanks with a total capacity of 35 m<sup>3</sup> for NaOH solution
  - the storage of 2 tonnes sodium thiosulphate
  - the storage of various gases in movable containers (approx. 0.52 m<sup>3</sup>) and a 25 m<sup>3</sup> propane tank

Physical-chemistry 1 (FC1): (2.2.5./a, b, e, f; 2.3.2./a, b, e, f and 17.2.1.1)

An installation for processing by oxidation, reduction, immobilization, neutralization and sludge dewatering virtually exclusively of inorganic and non-flammable waste and the processing of waste oil emulsions. The maximum capacity is 25,000 tonnes of waste per year and the total installed capacity is approx. 516 kW.

The installation includes pits, 3 batch reactors and 1 continuous flow reactor, 4 polisher tanks, 2 filter presses and the following storage facilities:

- a) waste substances: (see also section 17)
  - 10 tanks of 30 m<sup>3</sup> each for liquid, basic or acid waste
  - 12 tanks of 30 m<sup>3</sup> each for effluents
  - the storage in drums of 144 m<sup>3</sup> liquid waste not containing CN and of 144 m<sup>3</sup> liquid waste containing CN;
- b) raw materials: (quantities contained in section 17)
  - a 60 m<sup>3</sup> silo for CaO

- 4 tanks each of 30 m<sup>3</sup> for the storage of sodium hydroxide, sodium hypochlorite, iron chlorosulphate and sodium sulphide solution respectively
- storage in sacks of 1.2 tonnes sodium sulphide, 1.5 tonnes activated carbon, 3.8 tonnes sodium thiosulphate, 40 tonnes silicon dioxide and 10 tonnes sodium sulphide
- storage of 60 litres polyelectrolyte.

Physical chemistry 2 (FC2): (2.2.5./a, b, e, f; 2.3.2 / a, b, e, f and 17.2.1.1.)

An installation for the physical-chemical treatment of inorganic waste through solidification, neutralization, metal immobilization, anion immobilization and making resistant to penetration. The maximum capacity is 60,000 tonnes of waste per year and the installed capacity is approx. 210 kW. The installation includes a batch mixer and various dosing and weighing systems.

The installation is also equipped with the following storage facilities:

- waste substances: (see also section 17)
  - 3 silos with a total capacity of 214 m<sup>3</sup> for fly ash
  - 7 basins with a total capacity of 1,250 m<sup>3</sup> for bulk waste
  - the storage of waste in an 82 m<sup>3</sup> silo, in containers with a total capacity of 160 m<sup>3</sup> and in 720 200 litre drums;
- raw materials: (quantities contained in section 17)
  - 2 silos each of 75 m<sup>3</sup> for the storage of slaked lime and cement respectively.

Solvent distillation unit: (2.2.5 / d, e and f)

An installation for the recovery of solvents and equipped with a distillation unit (including a thin film evaporator, demister, condenser, congealer and a storage/mixing tank with a capacity of 30 m<sup>3</sup> (see also section 17).

The maximum capacity is 9,000 tonnes of waste per year and the installed capacity is approx. 338 kW.

The installation is also equipped with a storage for approx. 0.5 m<sup>3</sup> chemicals indoors and the storage of 50 litres nitrogen in a pressurized container.

Other installations/activities to which section 2 applies:

- the transshipment of waste not associated with processing of the waste (2.1.2)
- a waste buffer for the interim storage of waste with a capacity of approx. 3,000 m<sup>3</sup> (2.3.2./a, b, e, f – 2.3.4./b, c3, d, f, g, h, j and k)
- a mobile iron removal installation (2.2.2. / a2, f2)
- a fixed shredder installation with installed capacity of 286 kW and with a processing capacity of 48 drums per hour and a mobile shredder installation (2.2.3./b2, f2, g and 2.3.1./a, b)
- a washing installation for internal and/or external washing of tankers or trucks (2.2.6 / a, c, d)
- a container park for own waste (not divided up).

Other installations requiring permits

- a central effluent treatment plant, equipped with a pre-settling tank, a buffer tank and a resettling tank, electric motors totalling 301 kW for pumps, agitators and a compressor, 2 tanks of 30 m<sup>3</sup> each for NaOH and HCl respectively, one 1.8 m<sup>3</sup> tank for FeClSO<sub>4</sub> and the storage in drums of 1 m<sup>3</sup> TMT and 1 m<sup>3</sup> polyelectrolyte (storage included in quantities for section 17). Industrial effluent with list 2C substances is treated and discharged at a maximum rate of 200 m<sup>3</sup> per hour and 4,800 m<sup>3</sup> per day (3.6.3.2.)
- an alternator with a capacity of approx. 3.3 MW and driven via a steam turbine (12.1.1.)
- transformers with a capacity of 800 kVA, 6 x 1,600 kVA and 4,125 kVA respectively (12.2.1 – 12.2.2)

- a diaphragm unit for physical separation of air, with a capacity of 160 Nm<sup>3</sup> (s.t.p.) nitrogen gas per hour (16.2)
- air conditioning systems with a total capacity of 464.3 kW (16.3.1.2)
- various air compressors with a total capacity of 475 kW (16.3.2.3.)
- the storage of gases in movable containers with a total water capacity of 400 litres for acetylene, 950 litres for argon, 660 litres for various mixed gases, 54 litres for halon, 600 litres for helium, 710 litres for air, 1,980 litres for propane, 950 litres for nitrogen, 40 litres for nitrogen oxide, 300 litres for hydrogen and 1,080 litres for oxygen, together 7,724 litres (15.7.3.)
- storage tanks with a water capacity of 1,000 litres for argon, 25,000 litres for propane and 36,500 litres for nitrogen respectively (16.8.3)
- the storage of a total of 263 kg of toxic and/or very toxic raw materials and of a maximum of 176 m<sup>3</sup> toxic waste (17.2.1.1.)
- the storage of a total of 600,682 kg of harmful, corrosive and/or irritant raw materials, of a maximum of 3,063 m<sup>3</sup> harmful, corrosive and/or irritant waste and of 20 m<sup>3</sup> oxidising waste (17.3.3.3.)
- the storage of a total of 1,947 litres P1 liquid raw materials and of a maximum of 2,176 m<sup>3</sup> P1 liquid waste (17.3.4.3.)
- the storage of a total of 5,774 litres P2 liquid raw materials and of a maximum of 2,176 m<sup>3</sup> P2 liquid waste (17.3.5.3.)
- the storage of a total of 111,346 litres P3 liquid raw materials and of a maximum of 2,176 m<sup>3</sup> P3 liquid waste (17.3.6.3.)
- the storage of a total of 1,524 litres of P4 liquid raw materials and of a maximum of 2,176 m<sup>3</sup> P4 liquid waste (17.3.7.2.)
- 2 distributing pumps for gasoil (17.3.9.3.)
- a central laboratory and an acceptance laboratory (24.1.)
- a workshop equipped with electric motors totalling approx. 70 kW for metal-working (29.5.2.2.)
- 5 permanently installed motors with a nominal capacity of 635 kW, 611 kW and 3 x 239 kW respectively (31.1.2)
- 3 steam generators with a water capacity of 13,000 litres, 87,241 litres and 48,000 litres respectively (39.1.3)
- a turbine with a capacity of 3.3 MW (39.5.1.)

Vlarem<sup>1</sup> sections : 2.1.2.- 2.2.2.A.2. – 2.2.2.B.2. – 2.2.2.F.2. – 2.2.2.G. – 2.2.5.A. – 2.2.5.B. – 2.2.5.D. – 2.2.5.E. – 2.2.5.F. – 2.2.6.A. – 2.2.6.C. – 2.2.6.D. – 2.3.1.A. – 2.3.1.B. – 2.3.2.A. – 2.3.2.B. – 2.3.2.E. – 2.3.2.F. – 2.3.4.B. – 2.3.4.C.3. – 2.3.4.D. – 2.3.4.F. – 2.3.4.G. – 2.3.4.H. – 2.3.4.J. – 2.3.4.K. – 2.3.6.C.1. – 2.3.6.C.2. – 3.6.8.2. – 12.1.1. – 12.2.1. – 12.2.2. – 16.2. – 16.3.1.2. – 16.3.2.3. – 16.7.3. – 16.8.3. – 17.2.1.1. – 17.3.3.3. – 17.3.4.3. – 17.3.5.3. – 17.3.6.3. – 17.3.7.2. – 17.3.9.3. – 24.1.1. – 29.5.2.2. – 31.1.2. – 39.1.3. – 39.5.1.

## ARTICLE 2 – Link to the building permit

§ 1 This environmental permit is suspended if a building permit is also required for the installation which is its subject, under the law of 29 March 1962 relating to organisation of physical planning and urban building, and if that building permit has not been definitively granted.

This suspension will last until the building permit has been definitively granted or has been rejected in the final instance. The permit-holder should report the

<sup>1</sup> Vlarem – Flemish environmental regulations

definitive receipt of the building permit to the permanent delegation by registered letter.

§ 2 The suspended environmental permit lapses automatically on the day on which the building permit is definitively rejected in the final instance.

§ 3 The building permit which has been obtained for the installation which is the subject of the above-mentioned application for environmental permit will be suspended until the environmental permit has been definitively granted.

§ 4 The suspended building permit lapses automatically on the day on which the environmental permit is definitively rejected in the final instance.

### ARTICLE 3 – Conditions

The permit referred to in article 1 depends on strict compliance with the following conditions (in appendix):

§ 1. General: V01, V02, V05, V07;

§ 2 Sectoral: V08, V13, V15, V17, V23, V26, V35, V38, V39, V40

V44, V45, V46, V47, V57, V67, V69, V81:

§ 3. Specific:

#### General:

Within a period of 6 months from renewal of the permit, the operator must show through a report that the collection capacity of the chemical drain and the associated collection pits is sufficient for the required collection of liquids leaking from the drum storage areas.

This report should also indicate how the provisions of article 5.17.2.2.1§5 of Vlare II will be (or are being) complied with.

The chemical drain must be inspected at least every three years for tightness to liquids, subsidence, etc. This inspection must be certified by a recognised inspection body.

#### Tipping:

- The following waste materials may be tipped under salt cell conditions:
  1. waste substances in which the water-soluble part does not comply with article 5.2.4.1.3§3, no. 4 of Vlare II.
  2. waste substances which contain As (III) and are pre-treated by the soliroc process or a comparable solidification technique, making use of specific additives, and for which the end product has a leaching capacity of more than 1 mg/litre As
- The salt cell conditions are realised by the following method:
  - the salt cell consists of a stable base around which a stable embankment is built and on which HDPE sheet with a thickness of at least 1.0 – 1.5 mm is applied (or alternative materials with the same k-factor): if necessary an access route is provided in one of the sides of the salt cell;
  - the cell is filled with salts and when completely filled is permanently sealed;
  - the permanent sealing of the salt cell is achieved by application of HDPE sheeting or similar sheeting on the top of the cell and then both are laid on each other on the contact edges and fixed, so that the entire cell is made watertight;



- during the use of a salt cell, water loading on the cell is prevented by a permanent cover, or any water loading is removed and processed in the physical-chemical units.
- The specific waste substances containing As (III) are pre-treated by the best available methods; for waste substances with a high arsenic contamination the immobilization efficiency must be at least 99%;  
The necessary measures are taken to prevent solidified waste substances with a high arsenic contamination from coming into contact with percolation water or rainwater.
- The residual waste substances coming from the physical-chemical processing plant (physical-chemical 2 – solidification/immobilization) may be placed on the tip in slurry or paste form to harden, provided that the stability and safety of the tip is not threatened and provided that the provisions in the approved work plan are complied with.
- Bottom slag from the rotating drum furnaces should preferably be treated in an iron removal plant before tipping. The stocked quantity of untreated bottom masses should be limited to 2,500 tonnes.

Solvent distillation:

The waste gases released when the blending tank is filled should be treated via a filter installation, using activated carbon.

Noise:

In modifications to the installations or on replacement of parts, use should preferably be made of low-noise replacement equipment. During the performance of this work the possibility should also be investigated of applying sound insulation around the modifications or replacements.

Discharge:

- From one year after the date of this decision the following limits apply

Parameter	Unit	Emission limit
BOD	mg/l	60
COD	mg/l	450
TOC	mg/l	180
suspended substances	mg/l	60
precipitable substances	ml/l	1
fluorides	mg/l	10
chlorides	g/l	20
sulphates	g/l	2
total phosphorus	mg/l	2
phenols	mg/l	0.40
MAK	mg/l	0.050
benzene	mg/l	0.010
total cyanides	mg/l	0.10
free chlorine	mg/l	0.50
acrylonitrile	mg/l	0.01
organohalogenated compounds (EOX)	mg/l	0.50
organochlorine pesticides	mg/l	200 or 3 x detection limit
organophosphorus pesticides	mg/l	0.001 or 3 x detection limit
organotin compounds	mg/l	0.020 or 3 x detection limit
apolar hydrocarbon extr. in CCl4	mg/l	5
total chromium	mg/l	0.4
total zinc	mg/l	2
total cobalt	mg/l	0.1
total lead	mg/l	0.5
total nickel	mg/l	0.4
total arsenic	mg/l	0.05
total silver	mg/l	0.02
total manganese	mg/l	1
total copper	mg/l	0.4
total tin	mg/l	0.2
boron	mg/l	50
cadmium	mg/l	0.05

mercury	mg/l	0.05 0.01 as annual average
antimony	mg/l	1.5
barium	mg/l	1
beryllium	mg/l	0.002
molybdenum	mg/l	1.5
selenium	mg/l	0.1
tellurium	mg/l	0.05
thallium	mg/l	0.02
titanium	mg/l	0.2
uranium	mg/l	0.05
vanadium	mg/l	0.5
chloroform	mg/l	0.05
dichloromethane	mg/l	0.05
PAHs	mg/l	0.01
PCBs	mg/l	70

\* In deviation from article 4.2.2.1.1. 4, at an outdoor temperature of 25°C or more the temperature of the discharged industrial effluent may be a maximum of 35°C.

\* During periods of heavy rainfall (more than 30 l/m<sup>2</sup>. day) the maximum permitted discharge rates may be exceeded as a result of that rainfall.

By 31 December 2002 at the latest a feasibility study must be carried out to investigate which emission limits are achievable for the following parameters with the use of the best available technology and possibly with the installation of an additional treatment step. In this study the feasibility of the following target values must be investigated:

Parameter	Unit	Emission limit
BOD	mg/l	25
COD	mg/l	125
total nitrogen	mg/l	20
MAK	mg/l	0.020
free chlorine	mg/l	0.010 as individual
cobalt	mg/l	0.040
cadmium	mg/l	0.030
mercury	mg/l	0.010
antimony	mg/l	0.005
PAHs	mg/l	0.070
EOX	mg/l	0.001
	mg/l	0.05

By 31 December 2001 an interim report on this investigation must be submitted to the permit-granting authority, AMV and VMM.

#### ARTICLE 4 – Permit period

The permit referred to in article 1 is granted for a period:

1. commencing on the date of this decision except if:
  - a) this environmental permit is suspended because the building permit has not been definitively granted at the date of this environmental permit: in that case the permit period begins on the date on which the building permit is definitively granted: the operator must report this date to the permanent delegation by registered letter.
  - b) This environmental permit lapses automatically , in accordance with the provisions in article 2 § 2: in that case no permit period is allowed:
2. ending:
  - a) on 17 June 2004 for the tip (2.3.6.c.1., 2.3.6.c.2);

b) on 17 June 2019, being 20 years from the date of this decision, for the other installations.

ARTICLE 5 This permit does not infringe the rights of third parties.

ARTICLE 6

§ 1 For every change in the installation in the permit the provisions of chapter III-bis of Title 1 of Vlareem apply.

§ 2 Any take-over of the installation by another operator must be reported to the authority granting the permit before the date on which the take-over takes effect in accordance with the provisions in article 42 of the Vlareem.

§ 3 A renewal of the permit must be applied for in accordance with the provisions of Vlareem at the latest between the 18<sup>th</sup> and the 12<sup>th</sup> month before the current permit period expires.

ARTICLE 7

An appeal against the decision on the permit application can be submitted to the Flemish minister of the Environment and Employment, Graaf de Ferraris-gebouw, Emile Jacqmainlaan 156 bus 1, 1000 Brussels, in accordance with article 51 of Vlareem.

To support the acceptability of any appeal the attached certificate of service and the proof of payment of the prescribed dossier tax must be attached to the appeal document.

Antwerp, 17 June 1999

Present: Mr C. Paulus, Governor-Chairman, Messrs. V. Van Estvelt, J. Geuens, L. Helsen, Ch. De Veze, F. Geudens and A. Kockz, members and Mr K. De Raedemaecker, Provincial Clerk.

Reporter: L. Helsen

By order  
The Provincial Clerk

The Chairman

K. De Raedemaecker

C.Paulus

Decision implemented  
on  
The director

ORIGINAL

Certified true copy:  
For the Provincial Clerk  
Assistant  
(signed)  
Eduard Heulen

COPY