

PROCEDURE FOR DETERMINING SOIL CONTAMINATION IN PRACTICE:
View of OVAM

E. Van Dyck, E. Wille

OVAM Public Waste Agency for the Flemish Region, Kan. De Deckerstraat 22-26, 2800 Mechelen, Belgium

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A b s t r a c t. Procedure for determining soil contamination in practice in order to demonstrate soil pollution worked out by OVAM Public Waste Agency for the Flemish Region and the Flemish Government (Belgium) decree on soil decontamination is presented.

K e y w o r d s: soil contamination, soil decontamination, procedure of determining

INTRODUCTION

As a consequence of the approval of the soil purification decree an extensive framework has been created within which the problems of soil pollution can be regulated at a saturatory level. For the execution of the above-mentioned decree there are, in addition to the decision of the Flemish Government, a number of protocols in preparation related to research strategies.

This text deals with the methodology of ground research in order to demonstrate soil pollution on the basis of the Flemish Government decree on the soil decontamination.

EXPLORATORY SOIL RESEARCH

Defining the problem

The soil decontamination decree of 22nd February 1995 (Moniteur Belge 29/4/1995) provides stipulations in article 3 relating to the identification of polluted ground and more specifically the description of introductory ground research. During the parliamentary discussions, the minister proposed that it be the

intention of OVAM to work out modi operandi per category of company or type of soil contamination, with a systematic methodology per category.

At present, there is a draft of an exploratory investigation strategy prepared, which principally proposes a general methodology, making possible various ways of approaching the research. In addition, eleven separate methods for specific categories have been drawn up. It is noticeable that both documents coincide to some extent with the Dutch guidelines for introductory research. One important difference is the contribution of the know-how of Flemish soil decontamination experts. The application of the general plan is not completely rigid and leaves sufficient room for the expertise of the researcher. In that respect, the Flemish approach is a cross between the Dutch and Anglo-Saxon approaches.

This way of working is adopted because the recognised soil decontamination experts are sufficient guarantee of good execution. On the one hand, there are the strict conditions for recognition and suspension procedures and, on the other, the important financial consequences and responsibilities if fraudulent work is carried out. Finally, the assumption is made that a totally defined research procedure can lead to the expert losing an eye for detail, a "detail" which sometimes has very significant environmental consequences.

The standard procedure proposed is therefore established principally in order to send a report to an administrative level which OVAM can process simply by computer. This is a *conditio sine qua non* for the soil register, and the certification attached to it, to work efficiently. Naturally, the standard procedure also includes, in addition to the administrative data (the so-called checklist) a number of instructions with regard to the research strategy. These are also included as a minimum programme of basic data, site tests and analyses which have to be included in introductory research.

The body issuing the decree has, among other things, introduced the concept of historical soil pollution. Article 2 § 5 describes this as pollution caused by this decree coming into force. At present, numerous soil investigations are being carried out to demonstrate the historical nature of the soil pollution. Considering that the decree is not yet in force, there are equally few concrete guidelines with regard to the execution of such an investigation. In the present note a method of investigation is recommended to determine the historical soil pollution.

It would be wrong to suppose that after the decree of 29th October 1995 has come into force, all observations will be interpreted as new pollution. The time at which the pollution was caused is clearly indicated in the decree. The investigation has to state why the pollution should be regarded as historical. Proof of this is not the responsibility of OVAM but of the researcher. It is evident that principally in cases of uninterrupted use, the provision of proof is more difficult the longer time goes on. OVAM also emphasises the importance of not postponing such ground investigation for an unnecessarily long time.

Methods of execution of exploratory soil research

Introduction

This note is not in any way a manual for the execution of an historical soil investigation in a certain area. The general research

strategy is described and, in the case of the practical execution of drilling and analysis, attention is drawn to the methods described in the OVAM-VITO Waste Materials Analysis Compendium. One essential requirement is that the analysis be carried out by a recognised laboratory.

Setting up the investigation

An exploratory investigation of the soil has the aim of discovering whether there are serious indications of the presence of soil pollution in certain areas of land. This includes a limited historical investigation and a limited sampling (cf. art. 3 § 4). When possible historical soil pollution has been demonstrated, an analogous strategy can be followed.

It must be emphasised that in this phase of the investigation it is not yet the intention to determine the extent of the pollution. These actions are included in the soil investigation described (article 12). Exploratory investigation of the soil is based on the 'worst case' situations. This does not imply that no statement has to be made concerning 'unsuspected' zones of the terrain. This has to be proved too.

Taken strictly, serious indications may already have been found on the basis of the exploitation data and the reporting of disasters. The testing of such a pollution hypothesis on the basis of one or two site observations may demonstrate the presence of soil pollution, so that it can be assumed that the requirements for an introductory soil investigation have been satisfied. This methodology is not in accordance with the intentions of the body issuing the decree.

In the decree, an investigation in phases is assumed, which was also the case with OVAM in the past, by which the seriousness of the pollution has to be determined in the associated descriptive soil investigation, but in the prior phase there have to be sufficient elements present to judge the priority of the file.

As far as historical soil pollution is concerned, an extensive investigation is desirable, since only pollution described in the report will be catalogued as historical. It is entirely

wrong to assume that, if a certain pollution is established by a limited sampling, the other pollution which is detected at a later phase, in the same area, can automatically be described as historical.

For this reason, OVAM puts forward a minimal investigation package from which deviations can only be made with the justification required, if the expert judges that the use of lesser means will lead to analogous conclusions.

In essence, the following subsidiary aspects are distinguished in historical soil investigation:

- initial study,
- pollution hypothesis,
- drawing up an investigation strategy,
- field work,
- laboratory investigation,
- interpretation and evaluation,
- reporting.

In the course of this text, each item will be discussed separately and the emphasis will be laid on the administrative aspects.

A general remark is that the report should be a summarised version of the data collected, with the preference that the text should be a more or less continuous whole, with tables and maps and results of drilling and analysis included in appendices.

The initial study

The initial study is, as it were, the administrative site description (source description) and the surroundings (receptors in the widest sense). Where the area is situated and what reasons there are to assume potential pollution must be clearly deductible. Principally in a historic investigation, the person requiring the investigation has every interest in informing the expert as far as possible about the history of the area and the surroundings. The recommendation to use a standard analysis package to be carried out on a number of samples serves to fill in possible gaps.

Form A, which includes basic data, is appended to the report. The importance of property register information is underlined,

within the framework of the later inclusion in the ground register.

The pollution hypothesis

The initial study provides the necessary elements to draw up a pollution hypothesis.

The pollution hypothesis is schematically reproduced as an appendix to the report. In the table, there is a summary of the potential sources of soil pollution and the pollution parameters. In the report an estimate of the chance of pollution is also reproduced. In that case, mention is made of whether it is a disaster, pollution by care (lessness) in exploitation or another assumption.

Drawing up the research strategy

The research strategy is an essential step in the research and can be considered as the checking of the pollution hypothesis on the ground. Drawing it up, as a consequence, is directly linked to this hypothesis and the mobility of the pollution in the ground. The circumstances on the site are crucial in order to estimate the effectiveness of dispersion routes. The transport of pollutants in the natural subsoil is often too simplistic a model, because of the presence of all kinds of structures and interference in the ground because of which preferential routes are followed. In addition, structures above ground also, in many cases, hinder drilling.

The above mentioned observations and the diversity of the pollution hypotheses are, in fact, in contradiction with a standard approach to drilling and analysis. This is also a reason for the OVAM standpoint in relation to this matter, in which it is proposed that deviation from a compulsory minimum programme may be justified. In the parliamentary preparations it has moreover already been put forward that, before the introductory soil investigation, so-called modi operandi will be elaborated.

The investigation strategy now proposed for an introductory soil investigation is put forward in some important exposure routes of man to soil contaminants. The various sampling strategies are discussed separately below.

When carrying out an historical soil investigation these strategies can be considered directive.

SAMPLING STRATEGY 0

For ground which has already been decontaminated without consultation with OVAM (e.g., on the initiative of the owner), it may be required that, depending on the data available, a soil investigation be carried out to check the work which has been done. There is no standard procedure provided for this. In such circumstances the sampling strategy to be followed must be drawn up by the decontamination expert in consultation with OVAM.

SAMPLING STRATEGY 1: (partial) areas on which only the polluted centres are investigated

The (partial) areas to which strategy 1 is applicable have already been investigated following the prescriptions of the "Standard procedure for introductory soil investigation" for the presence of heavy metals, BTEX, PAHs, mineral oil and VOCI (standard package). On this basis, only those materials are included in strategy 1 which, on the basis of the prior study, after the decontamination has been carried out or the prior introductory soil investigation, still may be the cause of soil pollution.

On the basis of the previous study, an assumption exists that the area may be polluted with certain substances and there is sufficient information available with regard to the spatial distribution for the pollution centre to be located. The materials/compounds with which the area may be polluted, on the basis of the previous study, are further indicated by the term "suspected materials".

SAMPLING STRATEGY 2: (partial) areas with homogeneously distributed pollution of suspected materials

The (partial) areas to which strategy 2 may be applied have not yet been investigated in accordance with the prescriptions, of the "Standard procedure for introductory soil investigation". This means, that, in addition to

the suspected materials which are homogeneously distributed over the area, an investigation has to be carried out as to whether the areas are polluted with heavy metals, BTEX, PAHs, mineral oil and VOCI (standard analysis package).

"Homogeneously distributed pollution" means pollution which is homogenous in the horizontal plane.

SAMPLING STRATEGY 3: (partial) areas in which pollution centres may be situated

On the basis of the prior study, a suspicion exists that the area is polluted with certain materials. Moreover, there is sufficient information available with regard to the spatial distribution of them for the pollution centre to be located within an area of max. 100 m² on the (partial) area. The materials/compounds with which the area may be polluted, on the basis of the prior study, are further indicated by the term "suspected materials".

The (partial) area to which strategy 3 may be applicable have not yet been investigated in accordance with the prescriptions of the "Standard procedure for introductory soil investigation". This means that, in addition to the localised pollution, an investigation has to be carried out as to whether the areas are polluted with heavy metals, BTEX, PAHs, mineral oil and VOCI (standard analysis package). These materials can be considered the most common sources of soil pollution.

SAMPLING STRATEGY 4: (partial) areas without information in connection with the possible pollution situation

Strategy 4 investigates the presence of those materials which are most often encountered if there is a question of soil pollution (heavy metals, BTEX, PAHs, mineral oil and VOCI; see standard analysis package) based on the standard analysis package (Appendix 2).

The data collected during the initial study does not provide any concrete information in connection with the presence of certain specific pollutants.

Interpretation and evaluation

When the results are interpreted and evaluated, the division into subareas on the basis of the sampling strategies to be followed are no longer retained. The area is considered in its totality.

On the basis of the introductory soil investigation it must be possible to demonstrate whether:

- * the pollution is "new" or "historical",
- * there are serious indications of the presence of soil pollution on the company land investigated.

The nature of the pollution (new/historical) should be apparent from the interpretation of the data collected during the prior study.

In order to investigate the presence of soil pollution, all the results of analysis for ground and samples of groundwater are tested against the norms applicable to soil and groundwater.

Reporting

The definitive report includes the following sections:

- * prior study,
- * justification for the choice of investigation strategy,
- * area and laboratory investigation,
- * evaluation of results,
- * conclusion,
- * appendices.

SUMMARY OF CONCLUSION CERTIFICATE TO BE PROVIDED

The pollution condition of the area investigated is communicated in a summary text. This gives a brief account on the basis of which parameters there are serious indications of the presence of ground pollution in the area investigated. This text forms the last paragraph of the report and for recognition is outlined in the print out.

DESCRIPTIVE SOIL EXAMINATIONS

1. Described soil examination shall be conducted in order to establish the seriousness of the soil contamination. They shall to

give a description of the nature, quantity concentration and origin of the contaminating substances or organisms, the possibility that these might spread, and the danger that humans, plants and animals, as well as the surface water, might be exposed to it. It shall also seek to forecast the natural development of the decontaminated soil in the future (see Article 13 of the Flemish Government decree on soil decontamination).

2. A report on every descriptive soil examination carried out shall be communicated to OVAM within a period of thirty days of the completion thereof.

SOIL DECONTAMINATION PLANS

1. Soil decontamination plans shall determine the manner in which the soil decontamination shall be carried out.
2. They shall be drawn up and carried out under the direction of officially recognised soil decontamination experts.

Any soil decontamination plan shall include at least the following particulars:

- * the results of the descriptive soil examination;
- * the various relevant technical possibilities with regard to carrying out the soil decontamination operations;
- * an estimate of their cost;
- * an indication of their impact on the environment and of the results which they will produce, taking into account the provisions of Article 7 and 8 and any restrictions which could result from them regarding the future use of the contaminated land areas;
- * the measures which the compiler of the plan proposes to adopt in accordance with the provisions of Articles 7 and 8;
- * the time limits within these measures must be adopted;
- * particulars which identify the land areas on which such operations shall take place as are necessary for the purpose of carrying out the soil decontamination operations, together with the identity of their owner and user;

- * any purpose which can be assigned to the contaminated land areas following the completion of the soil decontamination, as well as a confirmation that these comply with the relevant town planning rules;
- * the restrictions which, after the soil decontamination has been carried out, shall apply in relation to the use of the contaminating substances which have been temporarily or definitively removed, or parts of the soil or of the buildings, will be treated or processed;
- * a description of those measures which shall be adopted in order to ensure both environmental and industrial safety when carrying out the soil decontamination operations;
- * such supervisory and surveillance measures as will be adopted after the soil decontamination work has been carried out, as well as the period for which these measures will be applicable;
- * a not-technical summary of the aforementioned particulars;
- * the impact of the carrying out of the soil decontamination operations on the neighbouring land areas.

THE FLEMISH GOVERNMENT (BELGIUM)
22 FEBRUARY 1995 - DECREE ON SOIL
DECONTAMINATION

The Flemish Parliament has approved and We, government, has ratified the following:

Chapter I - General provisions

Article 1.

This Decree regulates a matter referred to in Article 39 of the Constitution.

Article 2.

For the purpose of this Decree, the terms stated below shall have the following meaning:

1. Soil: the fixed part of the earth, including the ground water and the other elements and organisms contained therein.
2. Soil contamination: the presence, as a result of human activity, of substances or of organisms, whether in the soil or in structures which directly or indirectly produces, or is capable of producing, an adverse effect on the quality of the soil.
3. Soil contamination which represents a serious threat:
 - (1) any soil contamination involving, or capable of involving, contact between the contaminating substances or organisms on the one hand, and humans, plants or animals on the other hand, accompanied by the certainty or the probability that this contact will produce damaging effects on the health of humans, plants or animals;
 - (2) any soil contamination which can produce an adverse effect on the process of water collection.

When assessing the serious nature of the threat presented by soil contamination, particular account shall be taken of the following factors:

 - * the properties of the soil;
 - * the nature and concentration of the substances or micro-organisms;
 - * the possibility that the latter could spread;
 - * the purpose of the soil;
 - * the risk that humans, plants or animals, and water collection operations, may be exposed to the contamination.
4. New soil contamination: any contamination which was caused after the entry into effect of this Decree.
5. Past history of soil decontamination: contamination which took place prior to the entry into effect of this Decree.
6. Mixed soil contamination: soil contamination which occurred in part before and in part after this Decree entered into effect;
7. Contaminated land areas: land areas where the soil contamination occurred and land areas where the contaminating substances

- or organisms have spread or where the soil decontamination has produced damaging effects.
8. Land areas on which the soil contamination occurred: those land areas in which the contaminating substances or micro-organisms have come to find themselves on or in the soil.
 9. User: the natural or legal person who is the holder of a personal or real right to use the land area or the buildings in question.
 10. Emission: any contributory factor, emanating from humans, towards the contamination of the atmosphere, soil or water.
 11. Treatment of soil contamination: the removal, neutralising, immobilising, isolating or closing off of the soil contamination.
 12. Soil decontamination: the treatment of soil contamination by:
 - * drawing up and carrying out a descriptive soil analysis within the meaning of Article 13;
 - * the drawing up of a soil decontamination project within the meaning of Article 16;
 - * the carrying out of soil decontamination operations;
 - * where appropriate, the provision of follow-up action.
 13. Soil decontamination operations: operations aimed at the carrying out of a soil decontamination plan within the meaning of Article 15.
 14. Precautionary measures: measures aimed at protecting humans and the environment against the dangers of soil contamination, pending the carrying out of soil decontamination measures.
 15. Measures which correspond to the latest technology and which do not involve any excessive expenditure: the best available technical solutions which have been successfully applied in practice and whose cost is not unreasonable in the light of the result to be achieved in protecting humans and the environment, regardless of the financial situation of the person who is responsible for effecting the decontamination.
 16. Soil decontamination expert: an expert who has been recognised by the Flemish Government for the purpose of carrying out those assignments which are specified in this Decree.
 17. Closure of an establishment: the discontinuation of all operations, or of all material operations, in an establishment.
 18. The transfer of land areas:
 - * the transfer *inter vivos* of the ownership of land areas;
 - * the conclusion and termination of a rent agreement, commercial lease or of a grant of land whose cumulative duration is longer than 9 years;
 - * the establishment and termination of a long lease or of an agreement giving building rights;
 - * the conclusion of an ordinary land lease agreement for a building and land area, as well as the termination of such a land lease without taking up the option to purchase;
 - * the termination of an ordinary lease agreement of a building and land area, accompanied by the taking up of an option to purchase;
 - * the merger of companies, one of whom is the owner of contaminated land, or
 - * the splitting up of a company which is the owner of land areas.

The transfer *inter vivo* of the ownership of land areas, as an accessory to the right of ownership over part of the building, shall not be regarded as a transfer of land within the meaning of this Decree.
 19. OVAM: the Public Waste Products Corporation for the Flemish Region, established by the decree of 2/7/1991 relating to the prevention and Management of Waste Products, as amended on a number of occasions.

Chapter II - Identifying contaminated land areas, register of contaminated areas, restrictions on use and precautionary measures, adjustment of construction plans

Section 1. Identifying contaminated land areas

Article 3.

- (1) The Flemish Government shall, within a year of the entry into effect of this Decree, draw up a list of those establishments and activities which are capable of causing soil contamination.
- (2) It shall be necessary to carry out an exploratory investigation of the soil:
 1. on the initiative and at the expense of the transferor, for the transfer of land areas on which an establishment is or was located, or on which an activity is or was being carried out, which is included in the list referred to in (1) above.
Where an exploratory investigation has been carried out by the authorities within a period of two years prior to the transfer, and where no activities which could cause additional soil contamination have taken place since that investigation, it shall not be necessary to conduct a new investigation.
 2. on the initiative and at the expense of the utilizer, for the closure of an establishment or the definitive discontinuation of an activity included in the list referred to in (1) above.
- (3) The Flemish Government may lay down the general rule that the utilizers of certain categories of establishments or activities which are included in the list referred to in (1) above, must, within a period to be fixed by the Flemish Government, and subsequently at regular intervals in accordance with a timetable to be laid down by the latter make an exploratory investigation of the soil.
- (4) Exploratory investigations of the soil shall have the object and purpose of establishing

whether or not there are serious grounds for believing that soil contamination has taken place in certain land areas. These investigations shall include a limited investigation into the past history of the soil, as well as restricted sampling operations.

- (5) In the circumstances described in (2) and (3) above, the exploratory investigation of the soil shall be carried out under the direction of a soil decontamination expert. The results of each exploratory investigation of the soil, if carried out in accordance with (2) or (3) above, shall be communicated to OVAM within a period of 30 days of the termination thereof.
- (6) Without prejudice to the powers of the supervisory officials, conferred in accordance with other Laws or Decrees, OVAM may at all times proceed to or arrange an exploratory investigation. In such cases, the exploratory investigation of the soil shall be carried out by officials of OVAM or under the direction of a soil decontamination expert appointed by OVAM.
- (7) The Flemish Government shall determine the conditions and procedure for the recognition of the soil decontamination experts.

Section 2: Register of contaminated land areas

Article 4.

- (1) OVAM shall, within a time limit of one year, draw up a list of contaminated land areas.
- (2) For every contaminated land area, a file shall be organised which shall contain the following particulars:
 - (a) In every case:
 - * the details stated in the Land Register as communicated by the relevant departments of the Ministry of Financial Affairs;
 - * the identity of the owner;
 - * a summary description of the degree of seriousness of the soil contamination which had already been established in the light of the provisions of Article 7(1) of this Decree;

* any limitations on use or precautionary measures which had been proposed or imposed in accordance with Article 5, of this Decree.

(b) Where appropriate:

- * the reports relating to the exploratory or descriptive examinations, as well as the decontamination plans;
- * the soil decontamination plan;
- * the contents of the compliance certificate;
- * the statement made by OVAM and issued in accordance with Article 21(2) of this Decree.

- (3) Where OVAM organises a file concerning a contaminated land area, it shall forthwith provide the owner thereof with a certificate containing the particulars referred to in paragraph 2(a) above. The owner shall issue the user with a copy of this certificate.

OVAM shall at the same time immediately issue a copy of this certificate to the municipality on whose territory the contaminated land area is situated. The municipality shall make the certificates which it has received available for consultation by the interested parties. Any changes in the particulars included in the certificate shall also be communicated to the owner, the user and the municipality.

- (4) OVAM shall, whenever it is requested to do so, issue a soil certificate regarding the contamination of the land areas included in the Register. The certificate shall include the particulars referred to in paragraph 2(a) above.

Where no particulars have as yet been entered in the Register of Contaminated Land Areas in relation to the land areas which form the subject-matter of the application, the soil certificate shall mention this fact.

- (5) The Flemish Government shall lay down detailed rules concerning the organisation, functioning and accessibility of the Register of Contaminated Land Areas.

The Flemish Government may, in accordance with paragraph (4) above, make the issuing of soil certificates dependent on payment of a fee in order to cover the administrative costs arising there from, and fix the amount of this fee.

Section 3. Limitations of use and precautionary measures

Article 5.

- (1) Where the Flemish Government considers that the soil contamination prevents the contaminated land areas from being used for their purpose, it shall, on a proposal from OVAM, impose the necessary limitations on the use of those land areas after having given the owner and the user the opportunity to submit their observations.
- (2) Where OVAM considers precautionary measures other than limitations on use are necessary in order to protect humans or the environment pending the carrying out of soil decontamination operations, or following their carrying out, it shall, after having heard the observations made by the owner and the user of the contaminated land areas, lay down the appropriate precautionary measures.
- (3) Subject to provisions to the contrary these limitations on use or precautionary measures shall apply for an indefinite period. Once a soil decontamination plan has been carried out, or once they are no longer required, these limitations or precautionary measures shall be repealed or adjusted.
- (4) Interested parties may, by submitting a reasoned application, request the Flemish Government for the amendment or repeal of these limitations on use or precautionary measures. The Flemish Government shall make a decision on this application after having consulted OVAM.
- (5) Any decisions imposing, adjusting or amending precautionary measures shall be entered in the Registers of the Office of Mortgages.

- (6) The Flemish Government may determine the terms on which assistance may be awarded to the disadvantaged and innocent user.

Section 4. Adjustment of construction plans

Article 6.

During the process whereby the construction plans are being drawn up and revised, OVAM may make the necessary proposals to the appropriate authorities by means of which account can be taken of the measures adopted in accordance with this Chapter.

Chapter III - Soil Contamination which has occurred following the entry into force of this Decree

Section 1. General principles

Article 7.

- (1) The Flemish Government shall draw up soil decontamination standards. These shall determine the level of soil contamination which, if exceeded, shall be deemed to produce unacceptable effects on humans and on the environment, given the properties of the soil, as well as the latter's purpose.
- (2) Soil decontamination measures shall be adopted in accordance where the soil contamination exceeds the relevant soil decontamination standards.
- (3) Where OVAM is of the opinion that there are serious grounds for believing that the level of the soil contamination exceeds, or threatens to exceed, the applicable soil decontamination standards, a descriptive soil examination shall be carried out.
- (4) Where it emerges from the descriptive soil examination that the soil decontamination standards have been exceeded, a soil decontamination plan shall be drawn up and soil decontamination operations shall be carried out.
- (5) Where no soil decontamination standards have been drawn up, soil decontamination measures shall be taken if the soil con-

tamination represents a serious threat. The provisions of paragraphs (3) and (4) shall apply *mutatis mutandis*.

Article 8.

- (1) Soil decontamination shall have the object of achieving natural levels of soil quality. These levels shall be fixed by the Flemish Government and shall correspond to the amount of contaminating substances or organisms on or in the soil which are established as being the natural levels in non-contaminated soil areas with similar soil properties.
- (2) Where it is impossible, because of the properties of the soil contamination or of the contaminated soil areas, to achieve the natural levels of soil quality by adopting measures which correspond to the best available techniques which do not involve any unreasonable costs, the relevant soil decontamination measures shall have the minimum objective of achieving better levels of soil quality than those laid down by the applicable soil decontamination standards or, where this proves impossible to achieve, to prevent the soil quality from constituting a serious threat.
- (3) Where it is not possible to achieve the levels of soil quality laid down in paragraph (1) or (2) above by adopting measures which correspond to the best available techniques without involving any unreasonable costs, limitations on use or other precautionary measures shall, where appropriate, be imposed in accordance with the provisions of Article 5.
- (4) As long as the Flemish Government has not laid down any natural levels of soil quality, the soil decontamination measures shall be aimed at achieving levels of soil quality which are not expected to produce any adverse effects on humans or on the environment, in the light of the properties of the soil and the purpose to which the latter is put. The provisions of paragraph (3) above shall apply *mutatis mutandis*.

Article 9.

Where it proves impossible to assess the soil contamination in the light of the soil decontamination standards referred to in Article 7(1) of this Decree because of its special properties or for technical reasons, that decontamination shall be dealt with under the direction of OVAM by means of measures which correspond to the best available techniques without involving any unreasonable costs.

Section 2 . Obligation to carry out soil decontamination operations and other measures seeking to deal with soil contamination

Article 10.

(1) The obligation to carry out carry out, at the expense of the person or persons in question, soil decontamination operations in the cases stipulated in Articles 7(2) and 7(5), shall be incumbent on the following persons:

(a) where, on the land area on which the contamination took place, an establishment has been set up, or an activity is being carried out, which is subject to the licensing requirement or to the obligation to notify in accordance with the decree of 28/6/1985 relating to environmental licences, on the utilizer referred to that decree;

(b) in all other cases, on the owner of the land area on which the contamination took place, unless the latter has been able to prove that some other person exercises, for his own account, actual control over the land area in question. Where the owner provides evidence to this effect, the obligation in question shall be incumbent on that other person.

(2) The person who has been designated in accordance with the provisions of the previous paragraph shall not be obliged to carry out soil decontamination operations where he can prove that he meets all the following conditions:

1. he did not himself cause the contamination;
2. at the time at which he satisfied the conditions stipulated in the previous paragraph, he was not aware, or could not have been aware, of the contamination, and
3. as from 1/1/1993, no establishment or activity included in the list referred to in Article 3(1) had been set up or was being carried out on the land area in question.

In such cases, the soil decontamination, or other appropriate measures, shall be carried out by OVAM acting on its own initiative, without prejudice to the applicability of Article 11.

- (3) The person who acquired, from a related enterprise which was aware or should have been aware of the contamination, the licence or the notification certificate for the utilization of the establishment or activity referred to in paragraph 1(a) above, or who acquired the ownership or effective control over the land area within the meaning of paragraph 1(b) above, shall be deemed to have been aware of the contamination.

Article 11.

Anyone who incurs expenses pursuant to Article 10, may recover these expenses from the person who is liable in accordance with Article 25. Without prejudice to the obligation to carry out decontamination work, he may claim an advance payment from this person, or require him to lodge a financial security.

Section 3. Completion of the soil decontamination

SUBSECTION 1. Descriptive soil examinations

Article 12.

- (1) Descriptive soil examinations shall be conducted in order to establish the seriousness of the soil contamination. They shall seek to give a description of the nature, quantity,

concentration and origin of the contaminating substances or organisms, the possibility that these might spread, and the danger that humans, plants and animals, as well as the surface water, might be exposed to it. It shall also seek to forecast the natural development of the decontaminated soil in the future.

- (2) A report on every descriptive soil examination carried out shall be communicated to OVAM within a period of thirty days of the completion thereof.

Article 13.

- (1) Before carrying out any descriptive soil examination, an examination proposal shall be drawn up under the direction of an officially recognised soil decontamination expert.
- (2) The descriptive soil examination proposal must contain the following particulars:
- * a description of such contamination as has already been established and of such of its implications as have already been established;
 - * a description of the planned geological and hydrogeological examination;
 - * a description of the planned inquiry into the past history of the origin of the contamination;
 - * an indication of the places and the depths at which samples will be taken, and the laboratories where these samples will be analysed, as well as the methods applied during this analysis;
 - * a description of those measures which will be adopted in order to guarantee safety standards in the course of the examination;
 - * a proposal regarding the dates on which interim reports will be sent to OVAM on progress made during the examination.
- (3) OVAM shall be notified of the descriptive soil examination proposal by means of a registered letter against advice of receipt sent through the post, or delivered against advice of receipt at the offices of OVAM.

- (4) Within a period of thirty days following receipt, OVAM shall decide whether or not this examination complies with the provisions of this Decree.

This period of thirty days shall commence on the date of the postmark. This period shall expire at midnight of the final day.

- (5) OVAM shall issue a compliance certificate, or impose certain additions or amendments to the proposal. Where OVAM fails to make a decision within a period of thirty days, the proposal shall be deemed to comply with the provisions of this Decree.

Where OVAM lays down additions or amendments, the adjusted or amended proposal shall be submitted once again to OVAM within a reasonable period to be determined by OVAM, according to the same procedure as that laid down in paragraph (4) above.

Within a period of thirty days following receipt thereof, OVAM shall decide whether or not the adjusted or amended proposal can be deemed to comply with the provisions of this Decree.

Article 14.

- (1) Any descriptive soil examination proposal which satisfies the conditions stated in Article 13 shall be carried out under the direction of officially recognised soil decontamination experts.
- (2) Pursuant to the proposal, OVAM shall be notified of interim reports concerning the progress made with the examination. Within a period of fourteen days following receipt of each interim report, which period shall be calculated in accordance with the provisions of Article 13(4), OVAM may, on the basis of the results obtained up to that point, impose an addition to, or an adjustment of the examination.
- (3) Within a period of sixty days following receipt of the final report concerning the descriptive soil examination, this period being calculated in accordance with the provisions of Article 13(4), OVAM shall decide whether or not the examination

complies with the provisions of this Decree. OVAM shall either issue a compliance certificate or impose additional examination operations and fix the time limit within which they are to be carried out. Where OVAM fails to make a decision within a period of sixty days, the examination shall be deemed to comply with the provisions of this Decree.

SUBSECTION 2. Soil decontamination plans

Article 15.

- (1) Soil decontamination plans shall determine the manner in which the soil decontamination shall be carried out.
- (2) They shall be drawn up and carried out under the direction of officially recognised soil decontamination experts.

Article 16.

- (1) Any soil decontamination plan shall include at least the following particulars:
 - * the results of the descriptive soil examination;
 - * the various relevant technical possibilities with regard to carrying out the soil decontamination operations;
 - * an estimate of their cost;
 - * an indication of their impact on the environment and of the results which they will produce, taking into account the provisions of Articles 7 and 8 and any restrictions which could result from them regarding the future use of the contaminated land areas;
 - * the measures which the compiler of the plan proposes to adopt in accordance with the provisions of Articles 7 and 8;
 - * the time limits within which these measures must be adopted;
 - * particulars which identify the land areas on which such operations shall take place as are necessary for the purpose of carrying out the soil decontamination

operations, together with the identity of their owner and user;

- * any purpose which can be assigned to the contaminated land areas following the completion of the soil decontamination, as well as a confirmation that these comply with the relevant town planning rules;
 - * the restrictions which, after the soil decontamination has been carried out, shall apply in relation to the use of the contaminated land areas, and confirmation that any purpose which it will have thereafter complies with the relevant construction plans;
 - * the manner in which those contaminating substances which have been temporarily or definitively removed, or parts of the soil or of the buildings, will be treated or processed;
 - * a description of those measures which shall be adopted in order to ensure both environmental and industrial safety when carrying out the soil decontamination operations;
 - * such supervisory and surveillance measures as will be adopted after the soil decontamination work has been carried out, as well as the period for which these measures will be applicable;
 - * a non-technical summary of the aforementioned particulars;
 - * the impact of the carrying out of the soil decontamination operations on the neighbouring land areas.
- (2) Where the carrying out of the soil decontamination operations involves the utilization or modification of an establishment for which an environmental impact report or a safety report is required, the contents of the soil decontamination plan must be supplemented by means of the particulars referred to in Article 7 of the Decree of 28/6/1985 concerning environmental licenses.
 - (3) OVAM shall be informed of the soil decontamination plan by a registered letter against advice of receipt and sent through the post, or delivered at the offices of OVAM against advice of receipt.

(4) The owners and users of land areas, other than those which are to be decontaminated, on which operations are to be carried out which are necessary in order to carry out the soil decontamination, shall be informed by OVAM, within five days of receipt of the soil decontamination plan, of the submission of this plan and of their ability to consult the plan at the offices of OVAM and to submit any objections or observations they may wish to make to OVAM by registered letter, within a time limit of thirty days of the date on which they were informed of the plan.

(5) Where the soil decontamination plan involves activities or establishments which, under the Decree of 28/6/1985 on environmental licences, are subject to a licensing requirement, OVAM shall, in order to obtain their opinion, submit the soil decontamination plan, within five days of receipt thereof, to the Mayor and Aldermen of the municipality in which the land areas are situated on which the soil decontamination operations are to be carried out, as well as to all the other public authorities of which Article 12(1) of the said Decree stipulates that their opinion must be sought on applications for environmental licences for these activities or establishments, with the exception of OVAM.

Within a period of five days of receipt thereof, the Mayor shall publish details of the soil decontamination plan by displaying a notice on the location where the soil decontamination operations are planned, and shall make the plan available for consultation on the premises of the municipal authorities for a period of fourteen days.

During this period of publication, any person may submit objections and observations in writing to the Mayor and Aldermen. After the expiry of this period, and no later than 30 days following receipt of this plan, the Mayor and Aldermen shall communicate their opinion to OVAM. Where no opinion is issued within this time limit, the procedure may be continued over an extended period.

The other public authorities specified in the paragraph (1) above shall also submit their opinion to OVAM within a period of 30 days following receipt of the plan.

Where no opinion is issued within this time limit, the procedure may be continued over an extended period.

(6) Where the soil decontamination plan involves operations which, pursuant to Article 44 of the Law of 29/3/1962 on the Organisation of Town and Country Planning, are subject to a licensing requirement, OVAM shall submit the plan, within five days of receipt thereof, to the appropriate official within the meaning of Article 45(1) of the said law in order that the latter may issue an opinion. This official shall issue his opinion to OVAM within a period of 30 days following receipt of the plan. Where no opinion is issued within this time limit, the procedure may be continued over an extended period.

(7) Where the soil decontamination plan involves operations which, pursuant the Decree 24/1/1984 on measures of ground water control, as amended by the decree of 12/12/1990, are subject to a licence requirement, OVAM shall, within a time limit of five days of the date of receipt thereof, submit the soil decontamination plan, in order to invite an opinion on it, to the appropriate authorities and to such other public bodies as have been designated to deliver an opinion. These organs shall issue their opinion within a time limit of thirty days of the date of receipt of the plan. Where no opinion is forthcoming within this time limit, the procedure cannot be continued.

Article 17.

(1) Following receipt of the opinions, observations and objections referred to in Article - 16(4) and (5), or following the expiry of the time limits laid down in the above provisions, and no later than sixty days following receipt of the soil decontamination plan, OVAM shall decide whether or not

this plan complies with the provisions of this Decree. This time limit of sixty days shall commence on the day following the date of the advice of receipt. It shall expire at midnight of the last day.

- (2) OVAM shall award a certificate of compliance, or make proposals to add to or amend the plan. Where OVAM imposes any additions or amendments, the adjusted or amended soil decontamination plan shall once again be presented to the OVAM, in the same manner as stipulated in Article 16(3). Where OVAM fails to communicate its position within a time limit of sixty days, the soil decontamination plan shall be deemed to comply with the provisions of this Decree.
- (3) OVAM shall, by registered letter sent by post, give notification of the certificate of compliance or of the tacit confirmation of compliance to the following:
 1. the person who, under Article 10(1) of this Decree, is liable to effect the soil decontamination;
 2. the owner and user of the land areas to be decontaminated, where he or she differs from the person referred to under (1) above;
 3. the owners and users of the land areas referred to in Article 16(4);
 4. the Mayor and aldermen of the municipality referred to in Article 16(5);
 5. such other authorities as have issued an opinion in accordance with Article 16(5), (6) or (7).

On the instruction of the Mayor, the certificate of compliance, or the notification of the tacit confirmation of compliance, shall, within five days of receipt thereof, be publicised in the same manner as laid down in Article 16(4) and (5).

Article 18.

- (1) The persons and organs referred to in Article 17(3), and - in the circumstances described in Article 16(5) - the persons referred to in Article 24(1)(5) of the Decree

of 28/6/1985 concerning environmental licences, may, within a time limit of thirty days following receipt of the official notification referred to in Article 17(3), or following the expiry of the time limit within which publicising measures need to be adopted in accordance with the second subparagraph of the same Article, lodge an appeal against the certificate of compliance with the Flemish Government, by registered letter, against advice of receipt, sent by post.

The appeal shall have the effect of staying the procedure where it has been lodged by the Mayor and Aldermen, or by any other authority referred to in Article 17(3)(1), fifth subparagraph. In all other cases, the lodging of an appeal shall not have the effect of staying the procedure.

- (2) The Flemish Government shall make a decision within a time limit of thirty days following receipt of the appeal. The Flemish Government shall, within a time limit of ten days, give official notification of its decision to the appellant, to OVAM and to the other persons and organs referred to in Article 17(3). In the absence of a decision or official notification within the time limits specified above, the certificate of compliance shall be deemed to have been ratified.

SUBSECTION 3: Soil decontamination operations

Article 19.

- (1) Soil decontamination operations shall be carried out under the direction of a soil decontamination expert.
- (2) Where the soil decontamination operations include activities or establishments which, under the decree of 28/6/1985 relating to environmental licences, are subject to a notification or licensing requirement, the certificate of compliance referred to in Article 17(2) above, or the tacit confirmation of compliance of the soil decontamination

plan, shall qualify as an environmental licence or notification within the meaning of Article 4 of the said Decree.

- (3) Notwithstanding the provisions of Article 44 of the Law of 29/3/1962 on the Organisation of Town and Country Planning, the certificate of compliance referred to in Article 17(2) above, or the tacit confirmation of compliance of the soil decontamination plan, shall in the circumstances described in Article 16(6) above, also qualify as a planning permission.
- (4) Where the soil decontamination operations involve operations which, pursuant to the Decree of 24/1/1984 on ground water control, are subject to the licensing requirement, the compliance certificate referred to in Article 17(2) of this Decree, or where appropriate the tacit statement of compliance regarding the soil decontamination plan, shall also be deemed to be a licence for the collection of ground water within the meaning of Articles 3 et seq. of this Decree.

Article 20.

- (1) In the certificate of compliance, OVAM shall determine the conditions in which soil decontamination operations may be carried out. These conditions shall seek to ensure the protection of humans and the environment and the adequacy of any construction work complete on that location.
- (2) Where necessary, the certificate of compliance shall lay down such measures of supervision and surveillance as are still required after the soil decontamination has been carried out. Measures of supervision and surveillance shall be imposed for a minimum of 10 years' duration, where the operations concerned involve the decontamination of a dumping ground or of a former dumping ground.

Section 4: Supervision

Article 21.

- (1) Without prejudice to the powers of the

other supervisory officials appointed, in accordance with other laws and decrees, OVAM shall supervise the carrying out of the soil decontamination operations.

- (2) After the soil decontamination operations have been carried out, OVAM shall issue the person having carried out the soil decontamination operations with a statement confirming the results of the soil decontamination operations. In this context, reference is made to the objectives stated in Articles 7 and 8 of this Decree. Where limitations on use or precautionary measures have been imposed in accordance with Article 5 mention shall be made hereof in the statement.

Section 5: Measures of enforcement

Article 22.

- (1) OVAM shall have the power to order the owners or users of land areas in which a descriptive soil examination or soil decontamination operations are to be carried out, to give access to these land areas to such persons as have been appointed by OVAM in order to enable them to carry out the necessary operations there. In the execution of their duties, the OVAM officials may require the assistance of the municipal police force and of the national police force (Gendarmerie).
- (2) More particularly, OVAM may order the owners or users to allow the persons appointed by it to carry out an exploratory or descriptive soil examination, soil decontamination operations, or other measures referred to in this Decree, or to take samples or to remove or treat contaminating substances, or parts of the soil or of the buildings.
- (3) Where it is useful to do so for the purpose of carrying out the exploratory or descriptive soil examination, soil decontamination operations or other measures laid down in this Decree, the officials appointed by OVAM, as well as the soil decontamination experts or persons who are working under their direction or supervision, may

gain access to parts of, or accessories to, residential premises, subject to having obtained beforehand the appropriate written authorisation from the President of the Court of First Instance.

- (4) The owner and the user of the land areas referred to in paragraph (1) above shall, at least sixty days beforehand, be notified, by registered letter against advice of receipt, of the performance of the investigations, operations or other measures referred to in paragraphs (1) and (2) above. The letter shall contain a brief summary of the aims and the location of the investigation or of the operations.
- (5) At least eight days prior to the carrying out of the soil decontamination operations, a sworn land surveyor shall, at the request of the person who is to carry out the operations, draw up a topography of the location where the operations are to be carried out. The owner and the user shall, eight days beforehand, be invited by registered letter with advice of receipt to be present when the topography is being carried out. They may order the inclusion of any observations or findings in the official report of the topography.

Article 23.

- (1) Save in those cases for which the an appeal procedure is laid down in Article 18 of this Decree, any interested party may lodge an appeal with the Flemish Government against the decisions of OVAM in connection with the drawing up of a soil decontamination project and in connection with the performance of a descriptive examination of the soil on the one hand, and of the soil decontamination operations on the other hand. This appeal shall not have any suspensive effect.
- (2) The appeal must be officially notified, or delivered with advice of receipt, to the Flemish Government within a time limit of thirty days as from the official notification of the decision by OVAM.

- (3) The Flemish Government shall issue detailed rules relating to the appeal procedure.

Section 6: Expropriation

Article 24.

- (1) Without prejudice to its other powers in connection with expropriations, the Flemish Government may, before the soil decontamination operations are carried out, proceed, at the request of the person who, pursuant to this Decree, is bound to carry out the decontamination, or of OVAM, to the expropriation in the public interest of such real property as may be required. The expropriation shall be carried out for the account of, and on behalf of, the applicant.

Section 7. Liability and financial securities

Article 25.

- (1) Anyone who has caused soil contamination as a result of an emission shall be liable for all expenses which have been incurred in accordance with this title arising from the carrying out of an exploratory examination of the soil, of the soil decontamination, or of any other measures, as well as for any further damage which may be caused by these measures or by such limitations on use or precautionary measures which have been laid down in accordance with Article 5 of this Decree.
- (2) However, where the emission which caused the soil contamination emanates from an establishment, or is the result of an activity which, pursuant to the Decree of 28/6/1985 on environmental licences, is subject to the a licensing or notification requirement; the operator of this establishment or activity within the meaning of that Decree shall be held liable.

Article 26.

The liability for damage referred to in Article 25 which may be incurred by the person who satisfies the conditions set out in Article 10(2) pursuant to the rules which applied prior to the entry into force of this Decree, and which vested liability on the basis of the mere ownership or the mere surveillance of the land area in question, shall be restricted to the amount of those costs which are necessary in order to prevent the soil contamination from spreading any further or from presenting any immediate danger.

Article 27.

- (1) Where several persons are liable, pursuant to the provisions of this Decree, for the same soil contamination, they shall be held to be jointly and severally liable.
- (2) In such cases, the person who compensated the victim of the damage shall have the right to recover the amount of this compensation from the other liable parties, to the extent to which the various emissions for which they were liable contributed towards the soil contamination.
- (3) The provisions of this Decree shall be without prejudice to the rights of the person liable to recover the compensation on a different legal basis.

Article 28.

The provisions of this Section are without prejudice to any other rights which those persons who incurred expenses or damage within the meaning of Article 25 have against the person having caused the expenses or the damage, or against any other persons.

Article 29.

The person responsible for carrying out the soil decontamination shall, at the request of OVAM, provide financial securities for the

purpose of guaranteeing his obligations under Article 25.

The Flemish Government shall determine the manner in which these financial securities are to be lodged.

Chapter IV - Past history of soil contamination

Section 1: Criteria for decontamination, list of priorities and planning

Article 30.

- (1) On those land areas where there is a history of soil contamination, the soil decontamination process shall be carried out if the soil contamination represents a serious threat.
- (2) On a proposal of OVAM, the Flemish Government shall designate those land areas with a history of soil contamination on which soil decontamination must take place.

Section 2: Obligation to carry out soil decontamination

Article 31.

- (1) Where land areas having a past history of soil contamination have been subjected to soil decontamination operations in accordance with Article 30, OVAM shall instruct the person designated in accordance with Article 10(1) to carry out the soil decontamination. The person designated shall carry out the soil decontamination at his own expense.
- (2) The person referred to in the previous paragraph shall not be obliged to proceed to the soil decontamination where he is able to prove to the satisfaction of OVAM that:
 1. he did not himself cause the contamination, and
 2. at the time when he became the owner or user of the land area, he was not aware, or should not have been aware, of the contamination.

- (3) The person referred to in (1) who, although he was, or should have been, aware of the contamination, acquired prior to 1/1/1993 land areas with a past history of soil contamination, shall not be obliged either to proceed to soil decontamination if he is able to prove that he did not cause the contamination and that, since acquiring the land areas, he used them for his own professional or commercial purposes.
- (4) The person who acquired the utilization of the establishment or activity located on the land area in question within the meaning of Article 10(1)(a), or acquired the ownership or effective control over the land area within the meaning of Article 10(1)(b), from an associated enterprise which was, or should have been, aware of the contamination, shall be deemed to have been aware of the soil contamination.

Section 3: Liability and financial securities

Article 32.

- (1) Without prejudice to the provisions of Article 14, final paragraph, of the Decree of 20/4/1994 amending the Decree of 2/7/1981 concerning waste control, the liability for costs and other damage referred to in Article 25 in relation to land areas with a history of soil contamination shall be determined in accordance with the rules of liability which applied prior to the entry into effect of this Decree.
- (2) The liability for damage within the meaning of Article 25, which the person who satisfies the conditions stipulated in Article 31(2) or (3) may incur on the basis of rules which applied before the entry into effect of this Decree which based liability on the mere ownership or the mere surveillance of the land area, shall be restricted to the amount which is at most equal to those costs which are necessary to prevent the soil contamination from spreading further or from presenting any immediate danger.

Article 33.

The person who proceeds to the soil decontamination on those land areas which have a history of soil contamination shall, at the request of OVAM, provide financial securities for the purpose of guaranteeing his obligations in accordance with Articles 31 and 32.

Section 4: Mixed contamination

Article 34.

Where the soil contamination occurred in part before and in part after the entry into effect of this Decree, and where it is possible to discern two types of soil contamination, the provisions which apply to each type of contamination shall be applied.

Where it proves impossible to distinguish between the various types of soil contamination, only those provisions which were adopted after the entry into effect of this Decree shall apply.

Section 5: Reference

Article 35.

Articles 8, 9 and 12 to 24 shall apply *mutatis mutandis* in the case of soil decontamination carried out on grounds having a history of soil contamination and on grounds subject to mixed contamination.

Chapter V - Transfer of land areas

Section 1: Provisions which apply to all transfers

Article 36.

- (1) Prior to the conclusion of a contract relating to the transfer of land areas, the transferor must apply to OVAM for a Soil Certificate, and communicate the contents thereof to the acquirer. This certificate shall be issued within a time limit of two months following the application.

- (2) The private arrangement under which the transfer of the land areas is fixed shall include the contents of the Soil Certificate.
- (3) In all deeds concerning the transfer of land areas, the official drawing up the relevant deed shall record a statement by the transferor that the acquirer, prior to the conclusion of the contract, was made aware of the contents of the soil certificate. The official drawing up the deed shall at the same time incorporate the contents of the soil certificate in the deed.
- (4) The person who acquires the land acquires the land areas, or OVAM, may apply to have the transfer declared null and void where it has been concluded in a manner which infringes the provisions of this Article. Section 2. Provisions which apply to land areas on which an establishment was located or where an activity was, or is being, exercised which is included in the list referred to in Article 3(2).

Article 37.

- (1) The land areas on which an establishment is located, or on which an activity is, or was being, exercised, which are included in the list referred to in Article 3(1), may only be transferred after a prior exploratory examination has taken place, except in the circumstances described in Article 3(2)(1), second subparagraph.
- (2) The exploratory soil examination shall be carried out on the initiative and at the expense of the transferor under the direction of an officially recognised soil decontamination expert.
- (3) The transferor shall inform OVAM of his intention to proceed to the transfer. To this notification, he shall add a report of the exploratory soil examination.

Article 38.

- (1) Where, on the basis of an exploratory soil examination or of the Register of Contaminated Land Areas, OVAM is of the opinion that there are serious grounds for believing that a land area, within the

meaning of Article 37(1), has been affected by soil contamination which occurred after the entry into effect of this Decree and which exceeds, or threatens to exceed, the soil decontamination standards, OVAM shall, within a period of sixty days following the notification of the transfer, instruct the transferor to carry out a descriptive soil examination.

Where OVAM fails to issue this instruction within a period of sixty days following notification, the transfer may take place, without prejudice to the possibility of applying the other provisions of this Title.

- (2) Where it emerges from the descriptive examination or from the Register of Contaminated Land Areas that the soil decontamination standard has been, or threatens to be, exceeded, the transfer may not take place before the transferor
 - a. has drawn up a soil decontamination plan;
 - b. has undertaken towards OVAM to carry out the soil decontamination operations;
 - c. has provided financial securities in accordance with Article 29.

Where no soil decontamination standards have been drawn up, or where these are incomplete, the provisions of the previous paragraph shall apply *mutatis mutandis* where the soil contamination represents a serious threat.

- (3) The transferor shall not be obliged to follow the instruction to carry out a descriptive soil examination if he satisfies the conditions of Article 10(2).

The transferor shall communicate his viewpoint to OVAM within a period of 14 days. If the transferor does not wish to carry out the descriptive soil examination, the transfer cannot take place before the transferor has, at the request of OVAM, provided the financial securities in order to cover his liability pursuant to Article 25.

Where OVAM has failed to request the provision of the financial security within a period of sixty days of the transferor having communicated his viewpoint, the transfer may take place.

- (4) In the deed containing the transfer of the land areas, the official drawing up the deed shall mention whether or not the provisions of this Article have been applied.

Article 39.

- (1) Where OVAM, on the basis of the exploratory examination or of the results of the soil examinations carried out before the entry into effect of this Decree, is of the opinion that there are serious grounds for believing that a land area within the meaning of Article 37(1) has a past history of soil contamination which represents a serious threat, OVAM shall, within a period of sixty days following notification of the transfer, instruct the transferor to proceed to a descriptive examination of the soil.

Where OVAM has failed to issue this instruction within a period of sixty days of the notification, the transfer may take place, without prejudice to the possibility that the other provisions of this Decree could be applied subsequently.

- (2) Where it emerges, from the descriptive soil examination or from the Register of Contaminated Land Areas, that the land area has a history of contamination which represents a serious threat, the transfer will not be able to take place until the transferor

(a) has drawn up a soil decontamination plan;

(b) has undertaken towards OVAM to carry out the soil decontamination operations, and

(c) has provided financial securities in accordance with Article 33.

- (3) The transferor shall not be obliged to be compelled to act upon the instruction to carry out a descriptive soil examination if he satisfies the conditions laid down in Article 31(2) or (3).

The transferor shall communicate his viewpoint to OVAM within a period of fourteen days. If the transferor does not wish to carry out the descriptive soil examination, the transfer cannot take place

before the transferor has, at the request of OVAM, provided financial securities for the purpose of covering his liability in accordance with Article 32. If OVAM fails to request the provision of financial securities within sixty days of the transferor communicating his viewpoint, the transfer may be carried out.

- (4) The deed by which the transfer of the land areas is transacted, the official drawing up the deed shall mention whether or not the provisions of this Article have been applied.

Article 40.

- (1) The obligations which the transferor must satisfy under Articles 37 to 39 in order to be able to proceed to the transfer may, with the consent of the transferor, be met by the acquirer. The transferor or the acquirer shall inform OVAM that they wish to avail themselves of this possibility. They shall add to this communication a copy of the relevant contract.
- (2) The person who acquired the land areas, or OVAM, may apply to have declared null and void any transfers which are concluded in such a way that they infringe the provisions of Articles 37, 38(1) to (3) and 39(1) to (3).

Section 3: Expropriation

Article 41.

- (1) Any authority intending to proceed to an expropriation made in the public interest shall inform OVAM hereof.
- (2) The authority referred to in paragraph (1) above shall apply for a soil certificate relating to the land areas to be expropriated.

Article 42.

- (1) Where the expropriation concerns land areas on which an establishment is or was located or on which an activity is or was being carried out which is included in the list stated in Article 3(1), an exploratory

examination must take place prior to the expropriation.

The exploratory soil examination shall be carried out by OVAM at the request and at the expense of the expropriating authority.

- (2) Where an exploratory soil examination was carried out within a period of two years preceding the expropriation, and where no activities capable of causing additional contamination have taken place since that examination, no new examination will need to take place.

Article 43.

- (1) Within thirty days of the notification or of the exploratory soil examination, OVAM shall submit to the authority wishing to proceed to expropriation its opinion on the possible degree of seriousness of the soil contamination and on the possible cost of the soil decontamination.
- (2) Following the expropriation, the soil decontamination operations shall proceed. Depending on the circumstances, they shall proceed on the basis of the provisions of Article 7 or Article 30. The costs arising there from shall be recovered from the liable person in accordance with Articles 25 to 28, or Article 32.

Chapter VI - Closure of establishments or discontinuation of activities

Article 44.

The closure of an establishment or the discontinuation of an activity included in the list referred to in Article 3(1) shall give rise to soil decontamination operations. The provisions of Articles 37 to 39 shall apply *mutatis mutandis*.

The utilizer of an installation or of an activity which is included in the list referred to in Article 3(1) shall inform OVAM of his intention of proceeding to the closure of the establishment or to the discontinuation of the activity. He shall attach to this communication

a report on the relevant exploratory soil examination.

Chapter VII - Intervention by OVAM

Section 1: Intervention by OVAM on its own initiative

Article 45.

- (1) Where the person responsible for carrying out the soil decontamination fails to perform these obligations, or performs them unsatisfactorily, he shall be instructed by OVAM to satisfy his obligations within a certain period. Where the person in question fails to carry out this instruction, OVAM may act in his place on its own initiative.
- (2) OVAM may proceed to carry out the soil decontamination on its own initiative where the person appointed in accordance with Article 11.2.10(1) is not bound to carry out soil decontamination in accordance with Article 10 or Article 31.
- (3) Where the soil contamination represents an immediate threat, OVAM shall take appropriate safety measures. This power shall be without prejudice to the powers of the other authorities to adopt appropriate safety measures.
- (4) Where OVAM acts on its own initiative, it may require the assistance by other authorities, establishments or experts.

Article 46.

- (1) Every year, the Flemish Government shall, on a proposal by OVAM, draw up a list of those soil decontamination operations which shall be commenced or continued by OVAM acting on its own initiative in the course of the forthcoming year. This list shall feature an assessment of the costs which shall be charged definitively to the Prevention and Decontamination Fund for Nature and the Environment.
- (2) OVAM may depart from the list referred to in Paragraph 1 (a) when adopting safety measures in accordance with Article 46(4), and (b) where OVAM is compelled to act

on its own initiative because the person responsible for carrying out the decontamination work has failed to perform his obligations under this Decree, or failed to perform them satisfactorily.

Section 2: Advance financing

Article 47.

Every year, the Flemish Council shall, at the expense of the Prevention and Decontamination Fund for Nature and the Environment, allocate to OVAM a grant for the benefit of the Fund for Removal Work Initiated by the Authorities, in order to provide advance finance for the actions taken by OVAM on its own initiative for the purpose of carrying out the provisions of this Decree.

Chapter VIII - Additional powers of OVAM

Article 48.

In connection with the application of Articles 25 to 28, 32 to 34, 37 to 40 and 46(3) of this Decree, the Flemish Government may accept all arrangements, including proposals for composition, agree to settlements out of court, assign claims and securities, subrogate third parties in their rights, refrain from recovering monies, and conclude arbitration agreements.

CHAPTER IX - Transfer of ownership

Article 49.

Where the ownership of land areas is transferred, this shall not discharge the owner making the transfer from his obligations to perform such soil decontamination operations as arise from the application of Chapters III, IV, V and VI of this Decree.

This provision shall apply to transfers of ownership of land areas which have been effected after 1/1/1993.

Chapter X - Criminal law provisions

Article 50.

Without prejudice to the application of the penalties laid down in the Penal Code, any person who

- * fails to comply with the provisions of this Decree and its implementing decisions;
- * prevents the supervision measures imposed by or in accordance with this Decree from taking place;
- * fails to carry out the injunction ordered shall be punished by a prison sentence of one month to five years, and by a fine of one hundred francs to one hundred million francs, or by one of these penalties alone.

Chapter XI -Final; provisions

Article 51.

Every year, the Flemish Government shall submit a report to the Flemish Council concerning the application of the Soil Decontamination Decree.

Article 52.

This Decree shall enter into effect six months following the date of its publication in the Belgian Official Journal, with the exception of Articles 4, 36 and 41(2), which shall enter into effect one year following this date.

Article 53.

The provisions of Article 37 of the Decree of 2/7/1981 relating to the prevention and control of waste products shall not apply to the soil, or to the waste matter in the soil, which form the subject-matter of the soil decontamination.