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SOIL POLLUTION

FINNISH RESPONSE TO THE QUESTIONNAIRE

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I Information on polluted soils

1. A national database

The national register of polluted soil areas (Finnish Soil Inventory, FSI) contains data on some 21 000 sites, based on inventories conducted by the environmental authorities in the 1980-1990's. Of these, around 16 800 are potentially contaminated – based on knowledge of earlier or ongoing activities on these sites. The rest are either known to be contaminated or have already been cleaned up. About half of the sites in the inventory are located less than 100 metres from residential, groundwater or surface water areas, or less than 200 metres from a source of water supply.

The inventory was conducted for the first time in the early 1990's and it was updated during 1998 and 1999. A national database system on the state of soils has now been created. This will help improve the handling of contaminated sites and dissemination of information between, for instance, landowners and local and regional authorities.

Contamination of soils is, in most cases, a result of careless use of oil and chemicals or of mere ignorance. In Finland, typical activities or establishments that have caused soil contamination have been the distribution and storage of fuels, sawmills, impregnation plants, various industries, depots and garages, greenhouses and shooting ranges. Moreover, soil material of mixed origin and even waste material have been used for the filling of large areas, mainly along shores.

[1] We are grateful to Senior Adviser, Ms. Anna-Maija Pajukallio for her assistance. The text is to a considerable extent based on "*Status and policy on contaminated sites in Finland*" by Anna-Maija Pajukallio; and "Facts on Environment protection: Soil assessment and property owners", Ministry of the Environment, January 2008.

The most common harmful substances causing soil contamination are heavy metals (e.g. lead and arsenic), oil products, polyaromatic hydrocarbons, polychlorinated biphenyls, chlorophenols, and pesticides.

The data register is run by the Finnish Environment Institute. The database is directly accessible to state and municipal authorities. Most of the information in the system will be available to the public as environmental quality data. Data for a certain area or a certain site are also available on request to private persons and companies. Reports on specific properties are available on request from the regional environment centres. In the future, the database will be available on the internet.

Experience with the database is yet lacking. Landowners, whose property has been preliminary included in the database, have been contacted in writing during spring 2007. The database will be taken into full-scale operation in July 2008 after the checking of information is completed.

2. Requirements to provide information

In a property sale, the seller is obliged by law to disclose information in his knowledge about the condition of the property (see the Code of Real Estate, 540/1995, chapter 2, section 17). This includes historical use of the property and possible pollution of the ground. In case of neglect or in the case of a hidden fault, the sale may be cancelled or the price may be reduced. Hence, it is a system covered by private law. The transaction documents are stored in a public database, but unless specified in the sale agreement, information on soil pollution will not be recorded.

In any activity entailing possible harmful impact on the environment or on human health, the operator is required to be aware of the environmental effects.[2] In case of soil pollution, the operator is required to notify the authorities and to investigate and restore the site. This will normally entail an application for an environmental permit to the competent authority, which will entitle and, in some cases, order the applicant to remedy the site. Persons relinquishing or renting land shall provide the new owner or tenant with any information available on the activity carried out on the land and any wastes or substances that may cause pollution of the ground or groundwater (EPA, section 104). Anyone who observes that contamination has occurred, for example, during a construction project, must report it to the local environmental or health authority or the responsible regional environment centre, and, if it poses an immediate emergency, also to the fire and rescue

authority (see section 76). Neglecting these duties under sections 76 and 104 constitutes a criminal action, violation of the Environmental Protection Act, and is punishable (see EPA, section 116, subsection 2(4)).

II National legislation on soil pollution and enforcement

There is no specific act on polluted soils, but the Environmental Protection Act contains, inter alia, a chapter concerning specifically the rehabilitation of polluted soil or groundwater. Previously, to a large extent comparable provisions were in force by virtue of the Waste Act (1072/1993). This act is still in force, but the system of soil pollution prohibition, rehabilitation and enforcement was codified in the new general act on pollution control (EPA) from the beginning of March 2000. Even today some provisions of the repealed Waste Management Act (673/1978) may be relevant where old sins (which have taken place before a proper legislation on soil pollution was enacted) are at stake.

By the EPA, pollution of the soil and groundwater are prohibited. The ban on soil pollution (EPA, section 7) reads:

> *"Waste or other substances shall not be left or discharged on the ground or in the soil so as to result in such deterioration of soil quality as may endanger or harm health or the environment, substantially impair the amenity of the site or cause comparable violation of the public or private interest."*

Just like in the proposed Soil Framework Directive, the contamination of soil is in the EPA related to the effects, not to concentrations of harmful substances as such. The risk of soil pollution may lead to action. In the case SAC 2005:52 the Supreme Administrative Court referred, inter alia, to sections 7 and 84, subsection 1, of the Environmental Protection Act and obliged the property holder to remove containers containing some 100 cubic metres of waste oils from the real state.

The ban on groundwater pollution (EPA, section 8, subsection 1) states that

> *"A substance shall not be deposited in or energy conducted to a place or handled in a way that:*
> *1) groundwater may become hazardous to health or its quality otherwise materially deteriorate in areas important to water supply or otherwise suitable for such use,*
> *2) groundwater on the property of another may become hazardous to health or otherwise unsuitable for usage, or*

[2] See the Environmental Protection Act, 86/2000, hereinafter EPA, section 5: "Operators must have sufficient knowledge of their activities´ environmental impact and risks and of ways to reduce harmful effects."

3) the said action may otherwise violate the public or private interest by affecting the quality of groundwater."

Under the law, any party whose activities have caused pollution of soil or groundwater is required to restore the soil or groundwater to a condition that will cause no harm to health and the environment or represent a hazard to the environment (see EPA, section 75, cited infra under III). The prohibition on soil pollution also means that an environmental permit may not be granted for an activity which does not conform to this provision (section 42 subsection 1(3)).

The Environmental Protection Act belongs to the sphere of public law, but it contains provisions pertaining to all three categories of law, i. e. also to criminal law and civil law. The Act does not, however, include general provisions concerning damages caused by polluting activities. The Act on Compensation for Environmental Damage (737/1994) is applied for damages to private interests caused by pollution of water, air and soil. The damage claims are decided by an ordinary court of first instance. One peculiarity, caused by historical reasons,[3] is section 67 of the Environmental Protection Act:

"When a permit authority grants an environmental permit, it shall at the same time, unless otherwise is laid down in section 68, order ex officio that damage from water pollution caused by the activity be compensated."

In addition, the Government Decree on the Assessment on Soil Contamination and Remediation Needs (214/2007) contains procedural rules and threshold values for the assessment of soil contamination. According to the Decree, the assessment of contamination and remediation need should be based on site-specific risk assessment, in which the lower and upper guideline values are to be used. These values are based on significant risks to human health or soil ecosystem. In general, soil is considered as contaminated and risk reduction measures are required if the lower guideline value is exceeded. In the case of industrial or similar insensitive sites, the upper guideline value is applied. The threshold value indicates negligible environmental risk and it is used as a trigger value. When the threshold value is exceeded, a site-specific assessment of contamination and remediation need has to be carried out. Generally soils with concentrations below the threshold

[3] Before the EPA entered into force, the Water Act contained provisions concerning both water management and water pollution control. In this old system, compensation for (future) damage was, as a rule, ordered ex officio at the same time as the permit was granted. When moving towards a comprehensive system of pollution control to implement the IPPC Directive, the legislator did not want to weaken that system, which was favourable to riparian owners and owners of water areas.

values can be disposed (and utilised) without any further testing. Threshold values are given for metals, aromatic hydrocarbons, chlorinated hydrocarbons, biocides and mineral oil fractions.

In the Environmental Administration Guidelines annexed to the Government Decree, a tiered approach is suggested for the assessment of risk and remediation need. The assessment procedure is divided into three parts: evaluation of the need for assessment, basic assessment and specific assessment. When guideline values are exceeded or there are other indicators of potential risk, which can not be evaluated based on the guideline values, a specific assessment (or remediation) is required. Moreover, a specific risk assessment is required also in case the threshold values are exceeded and the site is located in a classified groundwater area or migration of contaminants may pose relevant risks outside the site (e.g. to surface waters). The assessment procedure is meant to lead to the identification of health risks and risks to the environment that stem from harmful substances, either directly or indirectly i.e. through air or water. Any risk management action can therefore be directed in the way which is appropriate and effective in terms of health and the environment.

The present Finnish legislation, e.g. the Environmental Protection Act, the Water Act (264/1961) and the Nature Protection Act (1096/1996) with extensive administrative powers to order the polluter to remediate for instance soil pollution, fulfills almost completely the provisions of Directive on environmental liability 2004/35. However, in order to implement the Directive duly and expressly, a framework act to transpose e.g. the main concepts and duties, such as article 7 and annex II concerning remedial measures, as well as minor amendments to existing legislation has been drafted (too late, though!). The idea is that the existing legislation would be applied in the first place, but the framework act provides a safety net to guarantee a correct implementation of every single article of the Directive. A draft Government Proposition for the relevant legislation has been sent out for comments mid-June 2008.

Soil pollution is a relevant factor also in many other fields of legislation than pollution control. In land use planning the municipality has to make sure that reports and studies concerning the status of soil are sufficient before a plan can be adopted (see Land Use and Building Act, 132/1999, section 9). If the soil is contaminated, the plan including e.g. a residential area cannot be adopted before it has been made sure that the soil has been cleaned up. Excavated contaminated soil is waste and, therefore, an environmental permit is required for its recovery and disposal (EPA, section 28, subsection 2(4)). This implies that the Environmental Protection Act, besides the Water Act, is

applied if, *e.g.*, contaminated sediment is to be removed in connection with harbour, pier or bridge construction.

In addition, companies engaged in operations potentially harmful to the environment are required to have an environmental insurance policy, covering remedying costs (Environmental Damage Insurance Act, 81/1998).

Compliance with the provisions of the EPA and other environmental legislation is supervised by state and municipal environment authorities. In case of breaches, the truant is requested to correct his act or omission and to remedy possible soil pollution. When necessary, the authority may request a court order, compelling the party at fault to remedy pollution or allowing the authority to do so at the faulty party's expense.

The present system is generally speaking rather effective. The main loophole is the insufficient legislation concerning ancient pollution, which has taken place before the Waste Act and especially before the Waste Management Act entered into force (1994 and 1979, respectively). The relevant actors have been conscious of the problem ever since the Waste Act was drafted in the beginning of the 1990´s, but the lack of political consensus has prevented a legislative solution and pushed the problem towards administrative courts for solution (see under III, infra).

III Soil pollution and liability

Soil pollution cases are one group of cases concerning pollution control. In the statistics of the Supreme Administrative Court soil pollution is, however, not a single group, but, instead, soil pollution problems appear in cases concerning administrative orders of rectification and environmental permits, even in cases of land use planning.

By the EPA, the polluter is in the first place responsible for the consequences of pollution and for remedying costs (the polluter pays principle). Secondarily, the holder of the property may under certain conditions be responsible for treatment. In the last instance, it will be the duty of the local authority to restore the site (EPA, section 75):

> *"Any party whose activities have caused the pollution or groundwater is required to restore said soil or groundwater to a condition that will not cause harm to health or the environment or represent a hazard to the environment.*

> *If the party that has caused the pollution of soil cannot be established or reached, or cannot be prevailed upon to fulfil its treatment duty, and if the pollution has occurred with the consent of the holder of the area or said holder has known, or should have known, the state of the area when it was acquired, said holder of the area shall restore the soil in so far as this is not clearly unreasonable. The holder of the area is also responsible, on the same preconditions, for treating groundwater if the pollution has arisen from pollution of the soil in the area.*
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> *In so far as the holder of the polluted area cannot be required to treat polluted soil, the local authority shall establish the need for and carry out soil treatment."*

Comparable provisions were found already in the Waste Act. However, in the case of orphan sites or old sites, where operations causing pollution have been terminated before 1 January 1994 (entry into force of the Waste Act), the situation is unclear and complex. Depending on when the contamination has occurred, the liability to remediate falls under different regimes of legislation.

Provisions concerning *responsibility* for treatment of polluted soil in the EPA are applied only when soil contamination has taken place after 1 January 1994. According to this act, either the polluter or the holder of the property was responsible for remediation. If the property holder of the polluted area or real estate is not able to treat the polluted soil the local authority (municipality) has to establish the need for soil treatment and carry out the work itself. Responsibility for old damages is insufficiently regulated in the old acts and, hence, the decisions have to be partly based on case law. Waste disposal sites that were closed down before 1 January 1994 or contamination that took place before that date are regulated by the repealed Waste Management Act of 1978. According to the last mentioned act, the party with primary responsibility for cleaning up the site is the polluter and, secondarily, the owner or holder of the property. In cases, where the polluter or owner has neglected his or her obligations, municipalities have sometimes been in charge of the remediation, together with the state. However, even if the responsibility would be based on the Waste Management Act, the *procedure* (permit, order to restore the contaminated soil) will follow the present legislation, i.e. the EPA.

As a rule, also laid down in a number of court decisions, the polluter is primarily responsible, when known and existent. In certain cases, also the present owner of the polluted land can be held responsible. As a last and practical resort, remediation costs are borne by the municipality or by national authorities, even if an explicit duty cannot be found in the Waste Management Act. In all situations, the liability to restore the polluted site is not linked to fault – the liability is objective,

attached to the activity or possession of land. In some cases, when the duty to clean up would be manifestly unreasonable (e.g. a private house owner who has bought his lot of land from the municipality could not be ordered to pay for restoration of an industrially polluted site) mere ownership would not establish liability.

The Supreme Administrative Court has decided several cases concerning responsibility for soil pollution dating back to times of no proper waste or pollution control legislation. About the rich case law we find that the prohibition to litter in the Waste Management Act has been interpreted widely and that it can still be used as a basis for responsibility of soil pollution under certain circumstances.

> The most notorious case is SAC 2006:30 (Kärkölä case): A sawmill company was held responsible for soil pollution caused by chlorophenols even if the pollution had mostly taken place before the Waste Management Act came into force. This was the result in spite of the fact that the use of the chemical containing chlorophenol (KY5) had been terminated before the ban on littering in the Act was amended by an explicit provision concerning littering by using a liquid substance. The operation of the mill was still continuing at the same sites.
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> However, in case SAC 12.6.2001 nr 1414 the prohibition to litter could not be applied, because the operation of the impregnation plant had completely terminated before the Waste Management Act came into force. Because the municipality was not the holder of the (residential) real estate, the municipality could also not be ordered to clean up the site on the basis of the so called system of waste management plan, based on the repealed Waste Management Act.

Peculiar to Finland, infringements of the soil pollution ban are resolved administratively, not – or only seldom - by criminal procedure. However, violation against the Environmental Protection Act, e.g. violation of prohibitions on soil and groundwater pollution shall be punished as such if the action has been taken deliberately or through gross negligence (see EPA section 116 subsection 2(4)). But if the criminal action entails degradation of the environment, provisions in chapter 48 of the Penal Code are applicable.

IV Rehabilitation of polluted soils

By the EPA, the polluter is required to remedy polluted soil at his/her expense. The criterion for rehabilitation is prevention of harm to human health and to the environment. Guidelines based on the Decree on the Assessment on Soil Contamination and Remediation Needs are used as tools for site-specific risk assessment. As above, enforcement and control rests, in the first instance, on state and municipal environment authorities.

The environmental authority must approve treatment or removal of contaminated soil or treatment of groundwater (EPA, section 78). This approval is given in a notification or environmental permit decision. Notification is used instead of a permit in more than 90 per cent of cases. Targets of the remediation are sustained in the decision. The competent permit and supervisory authority is, as a rule, the regional environment centre (section 78), but in the city of Helsinki the local environmental authority has the powers (section 80).

If the responsible party neglects the duty to restore the site, the regional environment centre shall order the party to fulfil its duty (EPA, section 79):

> *"The regional environment centre shall order treatment of polluted soil or groundwater if the party responsible for treatment under section 75 does not take action. The order is issued in compliance with the provisions of chapter 13, as applicable."*

Chapter 13 of the EPA contains provisions on supervision and administrative force. The most relevant sections concerning rectification of violation or negligence (section 84, subsection 1) and concerning threat of fine, of having action taken or of suspension (section 88) read as follows:

> *"A permit or supervisory authority may*
> *1) prohibit a party that violates this Act or a decree or regulation based on it from continuing or repeating a procedure contrary to a provision or regulation,*
> *2) order a party that violates this Act or a decree or regulation based on it to fulfil its duty in some other way,*
> *3) order action as referred to in subparagraphs 1 and 2 to restore the environment to what it was before or to eliminate the harm to the environment caused by the violation,*
> *4) order an operator to conduct an investigation on a scale sufficient to establish the environmental impact of the operations if there is justified cause to suspect that they are causing pollution contrary to this Act.*

Unless it is obviously unnecessary, an authority may intensify the effect of a prohibition or order that it has issued by threat of a fine, of having an omission corrected at the expense of the defaulting party, or of suspending operations.

Unless this Act requires otherwise, what is provided in the Penalty Fine Act (1113/1990) applies to matters related to a threat of a fine, of having action taken, and of suspension."

The interrelationships of a permit application to restore the polluted soil and an order to restore the site were clarified in SAC 2.6.2006 nr 1434. The idea was that a voluntary treatment by applying for a permit or by submitting a notice was the primary alternative, but if the restoration specified in the application or the notification was not sufficient the authority was also entitled to order treatment of polluted soil. As a permit normally only entitles (not obliges) the operator to do something, it was emphasised that provisions obliging the permit holder to restore the site could be attached to the permit or the notification decision.

When a property owner is ordered to remediate a plot of polluted ground, the order is normally issued by the environmental permit authority after an application by the property owner. In the case of the City of Mikkeli remediating an abandoned municipal waste dump, the City was obliged to collect, clean and monitor seepage water from the dump, to cover and seal the dump surface, to collect methane gas emanating from the dump and to seal the floor construction of existing buildings to prevent gas from entering the buildings (Eastern Finland Environmental Permit Agency N:o 3/05/2, Vaasa Administrative Court N:o 06/0032/2).

V Conclusion

Community legislation to protect the soil is needed and best applied as a framework Directive, as proposed (COM(2006) 232 final). As usual, the proposed Directive, however, imposes a lot of paperwork, time limits and bureaucracy on the supervising authorities, drawing resources from their actual work of combating soil pollution.