

GENERAL INFORMATION

Country /State - Region - Province	Person(s) completing the questionnaire	Organisation	Email	Remarks
Sweden	Erika Skogsjö, Helena Fürst, Erika Nygren	Swedish EPA (Naturvårdsverket)	erika.skogsjo@naturvardsver ket.se, helena.furst@naturvardsverk	

Please fill in the questionnaire by giving short answers to the questions presented in the three spreadsheets (A, B and C). Please write your answers on the empty rows below the questions.

Please note that the questions are related only to EXCAVATED contaminated soil (except Question 1.), including treated contaminated soil.

We are only expecting one filled questionnaire per country or region/province, so please agree on completing the questionnaire with you colleagues, if more than one person from your country will be attending the meeting.

We have introduced some alternative answers and explanations to help you with your answers and to hopefully shorten the time of completing this questionnaire, so do not hesitate to use them, if they are appropriate.

When the questions are not relevant to your country or you don't have any answers, you can use the following abbreviations: NR - not relevant, NI - no idea.

Please feel also free to provide links to any websites or documents for further information.

A- General situation

Management of excavated contaminated soil

1. What are the approx. proportions of *in situ*, on site and off site techniques in site remediation?

No official statistics on the proportions of different remediation techniques are available. In a report written during 2006 (within a knowledge programme financed by the Swedish EPA) a compilation of remediation techniques and a comparison between applications of strategies were carried out. The results, out of a comparison of a limited number of remediation projects (226 remediations in total, both state financed and private financed, of which 90 constituted remediations of petrol stations), showed that excavating and transport is the overall dominating remediation strategy. The second most common technique, according to this study, was *in situ* vacuum extraction/soil ventilation. According to this study *ex situ* strategies were used in 88% of the cases, 10 % constituted *in situ* strategies and 13% on site strategies. Reference: Naturvårdsverket, 1996. Åtgärdslösningar - erfarenheter och tillgängliga metoder. Rapport 5637. (in Swedish, Summary in English). Link to pdf:

<http://www.naturvardsverket.se/Documents/publikationer/620-5637-9.pdf> Link to webpage (in Swedish):

<http://www.naturvardsverket.se/sv/Verksamheter-med-miljopaverkan/Efterbehandling-av-fororenade-omraden/Hallbar-Sanering--kunskapsprogram/Rapportsammanfattningar--Hallbar-Sanering/Atgardslosningar---erfarenheter-och-tillgangliga-metoder/>

2. What is the typical amount of annually excavated contaminated soil (tons per year)?

Please indicate, if the figure is based on estimate or compilation of statistics.

The official statistics of 2006, reported to the EU in 2008 according to the EC decree 2150/2002/EC, showed that the amount of contaminated soil and dredging spoils during 2006 was in total 435 000 tonnes. The main part of this arised within the field of construction (about 400 000 tonnes). Reference: "Naturvårdsverket, 2008. Avfall i Sverige 2006. Rapport 5868" (in Swedish, summary in English)

<http://www.naturvardsverket.se/Documents/publikationer/978-91-620-5868-5.pdf>

3. What are the most common treatment methods for excavated contaminated soil?

The dominating amount of soil recieved at treatment facilities is contaminated by oil and treated biologically by covered or open composting. Reference: Naturvårdsverket, 1996. Åtgärdslösningar - erfarenheter och tillgängliga metoder. Rapport 5637. (in Swedish, Sumamry in English).

4. How much of all the excavated contaminated soil is typically reused as such and/or as treated?

Alternative answers: < 10%, 10-30%, 30-50%, 50-70%, 70-90%, >90%, etc. Please indicate, if the figure is based on estimate or compilation of statistics.

According to the official statistics of 2006 (reported to EU in 2008, see above) the amount of reused contaminated soil and dredged material during 2006 was approx. 84 000 tonnes, that is to say about 10-30% (20%) of the total amount. Reference:

http://www.naturvardsverket.se/upload/06_produkter_och_avfall/avfall/avfallsstatistik/data2006/avfall2006_behandlad_totalt.xls (in Swedish) . (Report in English of how the statistics were recieved:

<http://www.naturvardsverket.se/Documents/publikationer/620-5842-5.pdf>)

5. What are the main applications for reuse of excavated contaminated/treated soil?

Alternative answers: road construction, other soil construction, noise barriers, land fill covers, etc.

According to the waste statistics of 2006, about 1.0 million tonnes of hazardous wastes were treated according to the survey. 23% of this, 339 000 tons, were recovered (excluding energy recover). A large part of the recovered waste was contaminated soil which, after possible treatment, was used as cover material on landfills or construction material in construction works. Reference: Naturvårdsverket, 2008. Avfall i Sverige 2006. Rapport 5868 (summary in English) <http://www.naturvardsverket.se/Documents/publikationer/978-91-620-5868-5.pdf>). According to the report "Naturvårdsverket, 1996. Åtgärdslösningar - erfarenheter och tillgängliga metoder. Rapport 5637" (see above) the operators of treatment facilities mean that the treated soils are mostly used for construction and top covering at landfills. Further, a fair amount of treated soil is disposed for use outside the facilities in road constructions or other construction projects.

B- Policy issues

Management of excavated contaminated soil

6. List the existing policy instruments for the management of excavated contaminated soil (concerning instruments on reuse, treatment and landfilling)

Please shortly describe the instruments and/or provide links to websites or documents for further information

6a. Regulations

Regulation within the waste area is extensive. The definition of waste and the classification of waste are regulated through EC regulation. In the national law, the overall regulations on waste are found in the 15th Chapter of the Swedish Environmental Code and in the Waste Decree. (Reference: <http://www.sweden.gov.se/content/1/c6/02/28/47/385ef12a.pdf>) Sweden implemented the EC directive 1999/31/EC on the Landfill of Waste in 2001 through the Decree on Landfilling (SFS 2001:512). The Council decision (2003/33/EC) establishing criteria and procedures for the acceptance of waste at landfills was implemented in Sweden in 2004 through the regulation NFS 2004:10. The Swedish EPA provides guidance to supervisory authorities on landfilling and on waste recycling in construction works and may in some cases take part in the permitting process. The use of waste in construction is considered as an environmentally hazardous activity under the Ordinance on Environmentally Hazardous Activities and Public Health if the risk of contamination is not insignificant. Consequently, the use of waste in construction must be reported to the Municipal Council or licensed by the County Administrative Board if the risk of contamination is not insignificant (Web site in ENGLISH: <http://www.naturvardsverket.se/en/In-English/Menu/Products-and-waste/Waste/Management-and-treatment-of-waste/Utilisation-of-waste-as-construction-material/>). Treatment of waste is considered as an environmentally hazardous activity under the Ordinance on Environmentally Hazardous Activities and Public Health as well and must be reported to the Municipal Council or licensed by the County Administrative Board.

6b. Guidelines

The Swedish EPA have been instructed to draft criteria for waste recycling in construction, which we are working on at the moment. A problem with this utilisation is that we lack criteria to determine whether the recycled waste is a risk to human health or the environment. Assessments therefore have to be done on a one-off basis at present. The coming criteria will provide guidance on what is to be considered as an insignificant risk (see 6a, 9a) when it comes to waste recycling in construction works and provide guidance for the supervision authorities when handling applications for waste utilisation where the risk for contamination from the construction is not insignificant. The criteria will also provide guidance on the utilisation of waste for the top cover at landfills.

6c. BAT/BATNEEC criteria

Regulated through the Swedish Environmental Code

6d. Registers/inventories/databases (e.g. concerning information on soil streams, locations of reuse sites and treatment technologies)

If there are any, please indicate if the information is made available to the public

Not in place (no official information available).

6e. "Soil banks" or other logistic instruments for managing soil streams

Not in place (no official information available).

6f. Economic instruments (e.g. taxation and incentives)

We do not have taxes on deposition of contaminated soil. It has been investigated and discussed on a political level.

6g. Other instruments

NR.

7. Does the management of excavated contaminated/treated soil differ from the management of natural soil or the other waste streams?

If yes, please shortly describe how they differ (e.g. different legislation, different reuse criteria, different taxation, restrictions on the use)

The most important factor for the regulations and management of different materials is whether or not the material in question is comprised by the definition of waste (see 6a). However, in our coming guidelines - criteria for the utilisation of waste for construction purposes (see 6b) we will suggest conditions that, if they are all fulfilled, indicates that some waste types might be able to utilise for construction purposes without previous testing. One of these conditions is that there is no suspicion of contamination of the waste. As stated under 6f we do not have any landfill tax for the landfilling of contaminated soils. The landfill tax for other wastes in Sweden is 435 SEK/tonne.

8. Do you foresee any changes in the practices of soil reuse due to the new Waste Directive (2008/98/EC)?

Answers expected only from the EU countries

Yes, it can be expected that the interest for classifying waste as byproducts will be extensive and the coming End Of Waste criteria as well.

C- Technical issues

Management of excavated contaminated soil

9a. Are there guidelines and associated criteria to determine whether soil is suitable for reuse?

If yes, please shortly describe the contents of the guidelines (e.g. assessment tiers and the type of methods) and the type of criteria (e.g. soil remediation criteria, other risk-based soil concentration values, leaching criteria, toxicity criteria). Please feel also free to provide links to websites or documents for further information

The Swedish EPA have been instructed to draft criteria for waste recycling in construction, which we are working on at the moment. A problem with this utilisation is that we lack criteria to determine whether the recycled waste is a risk to human health or the environment. Assessments therefore have to be done on a one-off basis at present. The use of waste in construction is considered as an environmentally hazardous activity under the Ordinance on Environmentally Hazardous Activities and Public Health if the risk of contamination is not insignificant.

Consequently, the use of waste in construction must be reported to the Municipal Council or licensed by the County Administrative Board (Web site in English: <http://www.naturvardsverket.se/en/In-English/Menu/Products-and-waste/Waste/Management-and-treatment-of-waste/Utilisation-of-waste-as-construction-material/>). The coming criteria will provide guidance on what is to be considered as an insignificant risk when it comes to waste recycling in construction works and provide guidance for the supervision authorities when handling applications for waste utilisation where the risk for contamination from the construction is not insignificant. The criteria will also provide guidance on the utilisation of waste for the top cover at landfills. The criteria will entail guidance through values of total content of lead, cadmium, mercury, arsenic, copper, zinc, chrome, nickel PAH-L, PAH-M and PAH-H and leaching criteria for lead, cadmium, mercury, arsenic, copper, zinc, chrome, nickel chloride and sulphate. There will be two sets of criteria suggested for the supervision authorities - one for when the risk of contamination from the construction can be considered as insignificant (if it does not contain other contaminants) and one for guidance when utilising waste for the top cover of landfills above the sealing layer (under the sealing layer the NFS 2004:10 is applicable as it is comparable to landfilling and the Council decision (2003/33/EC) must be fulfilled. The criteria will also provide guidance for when waste contains other contaminants than the parameters mentioned.

9b. Are those mandatory or is it possible to deviate from them based on site-specific risk assessment?

If yes, please indicate if a risk assessment methodology to be used is defined

The upcoming criteria for reuse of waste will only be recommendations and guidelines. Site-specific risk assessments must be made when the risk for contamination is not insignificant and are made when a top cover of a landfill is suggested as well (the latter is always decided through discussions with the supervision or licensing authority).

10. Are there specific procedures for quality control related to reuse and/or treatment of excavated contaminated soil?

If yes, please list the elements they concern (e.g. sampling, methods, tests and interpretation of the results)

There are no specific quality control procedures at the moment. The Swedish Standards Institute is doing a work about "guidance on choice of methods for investigation of excavated soil". The Swedish EPA together with the Swedish Geotechnical Institute are currently investigating what procedures can be recommended when testing waste with the aim of utilising it as a construction material.

11. Are there any requirements for structures, monitoring or site conditions related to reuse applications?

If yes, please shortly describe the requirements

Specific requirements if contaminated soil is reused or if waste is utilised for construction purposes are, if applied, regulated in the site specific conditions set by the actual licensing/supervision authority in the specific case. The application of financial security for constructions that must be taken care of in the future is under discussion as is to regulate the maintenance of protective/sealing layers, etc.