

## GENERAL INFORMATION

Country /State - Region - Province	Person(s) completing the questionnaire	Organisation	Email	Remarks
Quebec, Canada	Michel Beaulieu	Quebec Sustainable development and Environment Ministry	<a href="mailto:michel.beaulieu@mddep.gouv.qc.ca">michel.beaulieu@mddep.gouv.qc.ca</a>	

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?**

*Your answer here*

**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.

500 000 tonnes/year (compilation)

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

Biological \*by far the most used technology), thermal. immobilisation

**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.

>90% (almost everything used as landfill covers)

**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.

landfill covers, noise barriers (seldom)

## 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

1) Regulation respecting the landfill and incineration of contaminated soil (2001)

<http://www.canlii.org/en/qc/laws/regu/oc-451-2005-2005-go-2-1182/latest/part-1/oc-451-2005-2005-go-2-1182-part-1.html>

In this regulation, it is stipulated that if a soil is contaminated above a certain level, it is compulsory to treat it before landfilling it, if there is an available treatment technology in Quebec.

2)

Regulation respecting contaminated soil storage and contaminated soil transfer (2007)

<http://www.canlii.org/en/qc/laws/regu/rq-c-q-2-r23.01/latest/rq-c-q-2-r23.01.html>

In this regulation, it is stipulated that a contaminated soil cannot be brought on or in a less contaminated soil. What can be done with an excavated contaminated soil is also described.

##### 6b. Guidelines

Soil protection and contaminated land rehabilitation Policy (1998). One chapter of the policy deals with the management of excavated soils and include a grid (table 2) showing what could be done relating to different levels of contamination (in French only). <http://www.mddep.gouv.qc.ca/sol/terrains/politique/chapitres9-10.htm>

##### 6c. BAT/BATNEEC criteria

No.

##### 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

1) A treatment centres list is available on Internet. <http://www.mddep.gouv.qc.ca/sol/lieux/centres.pdf> 2)

Each 5 years, a document assessing the current contaminated soil situation is put on the Web (Bilan sur la gestion des sols contaminés (in French only). There is a chapter (3) dealing with the management of contaminated soils, in which there is information on the soil streams, treatment technologies, etc.) 3)

We are planning to have a list of the companies offering in situ technologies on the Net soon.

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

No. There is 30 privately owned treatment centres. It is compulsory for them to register all the soils coming in (contamination type, soil quantity, from which project it is coming). This information is sent to the ministry.

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

We have a ministry incentives program (ClimatSol) (\$50 millions over 3 years) providing grants to contaminated site owners (municipalities or private) who redevelop contaminated sites. The rehabilitation grant amount is 20 % higher if the soil or the groundwater are treated (50% of the total cost instead of 30%).

##### 6g. Other instruments

No.

#### 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)

Yes. First, a soil can never be a waste (thus, a contaminated soil can never be a hazardous waste). Soil and waste are not managed using the same criteria and are not going in the same treatment or disposal facilities. Second, natural soil and contaminated soil are treated differently (the Policy grid specifies what can be done depending of different soil contamination levels). Basically, anything can be done with a natural soil

#### 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



## 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

Soil protection and contaminated land rehabilitation policy (1998). One chapter of this policy deals with the management of excavated soils and include a grid (table 2) showing the management option related to different levels of contamination (assessment tiers?) (in French only).

<http://www.mddep.gouv.qc.ca/sol/terrains/politique/chapitres9-10.htm>

#### 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

Yes. If the contaminated soil is reused on site, it is possible to allow a greater level of contamination. But this as to be approved by the ministry following that a risk assessment (human health, ecotoxicological as well as groundwater) has been done. For human health and ecotoxicological risk assessment, government guidelines must be followed. See for human health (French only) :

<http://publications.msss.gouv.qc.ca/acrobat/f/documentation/2002/02-227-02.pdf>

See for

ecotox. : <http://www.ceaeq.gouv.qc.ca/ecotoxicologie/pere/pere.pdf>

Note that specific

risk assessment is not an option for petroleum contaminated soils (they must be cleaned to generic criteria).

#### 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 is a procedure at the treatment centres to make sure that the treated soil as been really treated (samples have to be taken and analysed). As for the reuse of contaminated soil, it is the responsibility (and in the advantage!) of the person receiving soils on his land to make sure that the incoming soils are clean.

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

If yes, please shortly describe the requirements

Sound barriers must be build in a way that contamination will not mix with underlying soils and will not be accessible.