Proposed Excess Soil Regulatory Package – New Proposed Regulation and Amendments to Existing Regulations

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Introduction

A wide range of activities and projects require the excavation of *soil*. In many cases, the excavated *soil* is excess in that it cannot be left at the location where it was excavated. The challenge for those undertaking projects which generate *excess soil* is determining appropriate *receiving sites* for this *excess soil*. The Ministry of the Environment and Climate Change (MOECC) recognizes the importance of sustainable *excess soil* management that is protective of human health and the environment and that promotes reuse of *excess soil*. Recognizing this importance, in January 2014, MOECC released *Management of Excess Soil – A Guide For Best Management Practices*, which may be found at: https://www.ontario.ca/page/management-excess-soil-guide-best-management-practices.

As a result of concerns raised that *excess soil* was being illegally dumped, being relocated without appropriate consideration of quality, and that the MOECC's best practices were not being followed, the MOECC, supported by partner ministries, completed a review, under the Environmental Bill of Rights, 1993, of the need for additional policy to manage *excess soil*. The review found a need to introduce a regulatory framework for the management of *excess soil* that would clarify the responsibility of those projects that generate *excess soil* ("source site responsibility"). The review also identified the need to identify clear requirements governing the sampling and analysis of *excess soil*, the tracking of *excess soil* from the time of its excavation to the time it is deposited at a *receiving site*, and the *soil* quality standards that apply to *receiving sites*.

Based on the findings of the review, MOECC, together with partner ministries, developed an Excess Soil Management Policy Framework. This document was posted as a policy proposal in January 2016 and input was provided by stakeholders and Indigenous communities in 2016, and finalized in December, 2016. It can be found at: http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2016/012-6065%20final.pdf.

The framework includes 21 actions, some of which are completed, and several of which are underway. For example, the Canadian Urban Institute, supported by the Ministry of Municipal Affairs, has released a by-law language tool to assist municipalities with development of site alteration (fill) by-laws http://www.excesssoils.com/), and the Ministry of Agriculture, Food and Rural Affairs (MNRF) has released a fact sheet for farmers who may be depositing soil on their properties, which is available at: http://www.omafra.gov.on.ca/english/engineer/facts/16-055.htm.

This proposed regulatory package responds to several of the actions in the framework, including the following:

- Development of a new *Excess Soil* Reuse Regulation, supported by complementary amendments to existing regulations including Regulation 347 (General – Waste Management), O. Reg. 153/04 (Records of Site Condition), made under the EPA, and the *Building Code* (Actions 1, 2 and 18), made under the Building Code Act, 1992.
- Development of new reuse standards and sampling guidance for *excess soil* (Actions 12 and 13).

- Clarifying when waste approvals apply to *excess soil processing site*s and to *temporary excess soil storage sites* (Action 5).

Proposed Regulatory Package Contents

This document contains a plain-language description of proposed regulations that would be made under the *Environmental Protection Act* (*EPA*) related to the management of *excess soil*. It is therefore a regulation proposal under the *Environmental Bill of Rights, 1993*, S.O. 1993, c. 28 (EBR) and is being posted for public comment for a 60-day comment period. Though some of the wording in the document may appear like draft regulatory language, the document is not intended to convey the precise wording of provisions that may appear in the proposed *EPA* regulations. Instead the document is intended to convey the policy directions that will guide and inform the drafting of these *EPA* regulations. The MOECC will be using the feedback it receives on this proposal to draft the final regulations.

Attached to the EBR posting are two documents for review and comment. This one, which contains all of the components of the proposed regulatory package, and the other document is a rationale document related to proposed reuse standards.

Within this one document, are included all of the components of the proposed regulatory package. They are:

a) A NEW proposed *Excess Soil* Reuse Regulation under the *EPA* containing most of the *excess soil* management provisions including provisions governing when *excess soil* is designated as "waste" and requirements related to excess soil management plans (ESMP)
b) Schedule A, providing the contents of an excess soil management plan
c) Schedule B, providing requirements related to *excess soil* characterization, which may be placed in a separate document referenced by the regulation
d) Schedule C, providing *excess soil* reuse standards and approaches, which may be placed in a separate document referenced by the regulation, which is proposed to be called *Reuse of Excess Soil At Receiving Sites*
e) Proposed consequential amendments to Regulation 347
f) Proposed consequential and minor amendments to O. Reg. 153/04, including prescribing a new *excess soil* purpose for the Environmental Site Registry
g) Minister's regulation under section 168.9 of the *EPA* (and delegation agreement) to authorize the operation of the *Excess soil* component of the Environmental Site Registry to be operated by a third party
h) Proposed amendment to the *Building Code* pertaining to applicable law.

How to Read This Document

The following contains the regulatory proposals as they relate to each proposed new or amending regulation and each technical document. There is some explanatory text as well. The explanatory text is the full page width, whereas the regulatory policy proposals are indented, and are in bold text. Terms that are *italicized* are defined. Definitions are all located in their own section at the end of this document; however a few more fundamental definitions are also located in the sections to which they most directly pertain.

Comments

Based on input received on this proposal and consideration of all comments, appropriate revisions will be made to the policy and regulations will be drafted and brought forward to Cabinet for decision.

Your feedback on this document is encouraged. As much as possible, please include in your comments a reference to the related section described by this document to assist our analysis. Please respond through the Environmental Registry at https://www.ebr.gov.on.ca/ERS-WEB-External/ (EBR # 013-0299) or send comments to:

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Or

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<u>NEW</u> EXCESS SOIL REUSE REGULATION - Under the Environmental Protection Act

The MOECC is proposing a new regulation under the *EPA* that would deal with the following matters:

1. Clarifying when *excess soil* is a "waste" under Part V of the *EPA* and when *excess soil*, if deposited at a *receiving site* that is not a waste disposal site, ceases to be a waste.
2. Identifying the circumstances when an excess soil management plan (ESMP) is required to be prepared, and rules governing its preparation including the plan contents. Those contents include the following components:
    i. How the quality of *excess soil* should be characterized;
    ii. How *receiving sites* for the management and deposit of *excess soil* should be identified;
    iii. Requirements governing the registration of an ESMP and soil movements that are carried out under the plan;
    iv. Requirements for tracking *excess soil* from the time of its excavation to the time it is transported to a *receiving site*;
    v. Record keeping; and
    vi. The use of temporary *excess soil* storage sites (*TESSS[s]*).
3. Clarifying when an Environmental Compliance Approval (ECA) under Part V of the *EPA* (Waste Management) is required for the on-site processing of soil.
4. Clarifying rules when an ECA is needed for soil processing sites and *soil banks*, and establishing some rules that apply to these sites.
5. Clarifying the rules governing the removal of *soil* that is liquid waste.

Designation of Excess Soil as Waste and Determining When Excess Soil Ceases to be Waste

There has been confusion in determining in what circumstances "*excess soil*" is a "waste" for the purposes of Part V of the *EPA* (Waste Management). Often the issue has been resolved in determining whether the *excess soil* in question satisfies the definition of "inert fill" as defined in Regulation 347 . However the definition is very difficult to apply to *excess soil* – for instance, it is hard to know what the quality standards are that the *excess soil* must meet to satisfy this definition.

Knowing when *excess soil* is a "waste" is important because it establishes when the material is subject to the requirements Part V of the *EPA*. These requirements include the need to manage waste in accordance with requirements in Regulation 347, the need to use an approved waste management system to transport the *excess soil* and the need to dispose of the *excess soil* at a waste disposal site. Where a person unlawfully disposes of waste on a property, the person who owns the property and the

person who arranged for the disposal may be subject to an order to remove the waste and dispose of it appropriately and in accordance with Part V of the *EPA*. It is for this reason that clarity around when *excess soil* is designated as a waste is so important.

The proposed regulation would designate as a waste any *excess soil* from the time it leaves the property from which it is excavated. This designation would apply regardless of the quality or quantity of *excess soil* that is destined for deposit at a *receiving site*, and the waste designation would apply irrespective of whether an ESMP is required. The waste designation would attach to the *excess soil* until the time the *excess soil* is deposited at a *receiving site* that is not a waste disposal site within the meaning of Part V of the *EPA*. A waste disposal site under the *EPA* includes a landfill, a soil processing facility and a *soil bank* – all of which are required to operate under an ECA.

One of the objectives of the proposed Excess Soil Reuse Regulation is to try to reduce the amount of *excess soil* being disposed of at landfills. For this reason, the waste designation on *excess soil* would cease where it is deposited in accordance with a site specific instrument that authorizes the deposition of *soil* at that *receiving site*. In cases where a *receiving site* is not governed by a site specific instrument, the *soil* may be deposited at a *receiving site* as long as the deposit complies with the MOECC's proposed **"***Reuse of Excess Soil At Receiving Sites*" as highlighted in Schedule C. This publication will provide direction on how site specific *soil* quality standards and requirements governing the deposition of *excess soil* can be established in the absence of a site specific instrument, thus helping to ensure the *excess soil* is deposited without posing a risk to human health or the environment and is reused appropriately.

To assist in the management of *excess soil*, the proposed regulation would also exempt the temporary storage of *excess soil* at a *TESSS* from the ECA requirements in Part V of the *EPA* (sections 27, 40 and 41). Please see the section below entitled Temporary Excess Soil Storage Sites for a further discussion. Further, where *excess soil* is being transported to a *receiving site* that is not a waste disposal site, the proposed regulation would exempt such shipments from the ECA requirements in Part V of the *EPA* and thus there would be no need to use approved waste haulers or waste haulers who are registered on the EASR (Environmental Activity Site Registry) for such shipments. For further information on this, please see the section entitled Circumstances When Hauling Excess Soil is Exempt from ECA Requirements.

> ***Excess soil* is designated as a waste at the moment it leaves a *project area*.**
>
> **The designation of *excess soil* as a waste ceases at the moment at which at which one of the following occurs:**
>
> **a) the *excess soil* is deposited at a *receiving site* that is not a waste disposal site and that is governed by a *site specific instrument or by-law*,**
> **b) if the *excess soil* originates from an *infrastructure project*, the *excess soil* is deposited at a project area of *an infrastructure project* that belongs to the same proponent, or**
> **c) the *excess soil* is deposited at a *receiving site* that is not a waste disposal site and is not governed by a *site specific instrument or by-law*, and all of the following criteria are met:**

i. **the *excess soil* is deposited at the receiving site is in accordance with the Ministry's proposed *Reuse of Excess Soil At Receiving Sites*, and**
ii. **the *excess soil* has been used at the *receiving site* as backfill for an excavation, for final grading, to fill a depression to the grade surrounding the depression, or to achieve a grade necessary for planned development or landscaping, and**
iii. **The *receiving site* is not being used solely or primarily for the purpose of depositing *excess soil*.**

Sections 27, 40 and 41 of the Environmental Protection Act do not apply to *excess soil* deposited and stored at a receiving site mentioned in sub-clause (c) (ii) (above) prior to the soil being used in the manner specified in that sub-clause if,

a) **the receiving site is part of an infrastructure project and the *excess soil* is intended to be used as part of the *infrastructure project*, or**
b) **if the receiving site is not part of an *infrastructure project*, the *excess soil* is stored at the *receiving site* prior to its use for a period of not more than 90 days.**

"Site specific instrument or by-law" means any instrument under a provincial Act or any instrument under a federal Act that can regulate the quality or quantity of *excess soil* deposited at a *receiving site*, and includes the following:

i. **a by-law under section 142 of the *Municipal Act* or a permit issued pursuant to a by-law passed under that section,**
ii. **a licence or permit issued under the *Aggregate Resources Act or,***
iii. **an approval under the Planning Act that can regulate the quality or quantity of excess soil deposited at a receiving site**

Excess Soil Management Plan Requirement

It is proposed that an ESMP be required to be prepared and implemented for movements of *excess soil* that exceed a quantitative or qualitative threshold, to ensure the *excess soil* is properly managed and relocated. This would clarify the *proponent's* responsibility for *excess soil* management, provide for the characterization of *excess soil* and identification of appropriate *receiving sites*, and increase transparency in the movement of *excess soil* by providing for tracking and reporting.

It is proposed that a *proponent* be required to prepare an ESMP if either of the following criteria is met: 1. if 1000m^3 or more of *excess soil* (about 100 truckloads) is being removed from a *project area*; or 2. if *excess soil* is being removed from an area associated with a *potentially contaminating activity (PCA)*. A plan would be required to be prepared, certified by a qualified person (QP) and registered on an online *excess soil* reuse registry prior to *excess soil* leaving a *project area*; moving *excess soil* from a *project area* would be prohibited unless this is completed. Some exceptions are proposed, such as *excess soil*

management that may be required to be performed in emergency circumstances, so that excavation and *excess soil* movement would not be delayed. These are described in the next section, entitled Exemptions.

An ESMP would be required to include the information listed in Schedule A, and would be required to be prepared by, or under the supervision of, a QP. The characterization of the *excess soil*, the determination of appropriate *receiving sites*, and the requirement to track *excess soil* movements from the time of excavation to the time of deposit at a *receiving site* are key components of the ESMP and are further described below.

No person shall cause or permit the removal of any *excess soil* from a *project area* unless,

a) **an ESMP has been prepared in respect of the *excess soil* and,**
b) **a notice of the plan's preparation has been registered in the Environmental Site Registry.**

The above prohibition does not apply if it can be demonstrated that,

a) **the *excess soil* to be removed from a *project area* is less than1000 cubic metres and,**
b) **a *PCA* is not being engaged in within the *project area*, or based on reports or other readily available information about the project area including environmental site assessments, it is known or can reasonably be determined that a *PCA* has not been or has not likely been engaged in within the *project area*, or the *excess soil* does not originate from any part of the *project area* potentially affected by the *PCA.***

Exemptions

An ESMP would not be required in respect of *excess soil* leaving a *project area* in response to an emergency, such as a spill or an infrastructure failure, so that work can be completed promptly.

Further, it is proposed that *excess soil* resulting from regular maintenance and repair of infrastructure would be exempt from the need for an ESMP. Most of these maintenance activities would be routine, making it impractical to prepare a plan, and would generate smaller volumes of *soil* as individual projects. It is also recognized that the effort to prepare a plan may not be warranted for very small volumes of *excess soil*.

It is also proposed that an ESMP would not be required for projects generating less than $100m^3$ if the *excess soil* is going to be sent directly to a waste disposal site. Additionally if excess soil is transferred between *infrastructure projects* by the same *proponent* or if *excess soil* is removed from a *project area* that is on Crown land or away from a settlement area an ESMP would not be required.

Excess soil from projects that are exempt from the requirement for an ESMP would, like other *excess soil*, be designated as waste and subject to the associated requirements once excavated and removed from the *project area*.

The requirement for an ESMP does not apply in relation to *excess soil* which results from any one of the following circumstances:

a) **Excavation of soil necessary to comply with a duty imposed under Part X of the EPA (spills) or to comply with an order or direction issued under that Part.**
b) **Emergency work requiring the excavation and relocation of *excess soil*, other than work described in (a) above, necessary to reduce or eliminate any risk of,**
    i. **Danger to the health or safety of any person;**
    ii. **Impairment or serious risk of impairment of the quality of the natural environment for any use that can be made of it;**
    iii. **Injury or damage or serious risk of injury or damage to any property or to any plant or animal life; or**
    iv. **Damage to *infrastructure* requiring immediate work.**
c) **Regular maintenance or repair of *infrastructure*, including roads, drinking water, sewage and stormwater systems.**
d) **The volume of *excess soil* does not exceed 100 cubic metres and the *excess soil* being transported directly to a waste disposal site (including a *soil* bank or *excess soil processing site*).**
e) ***Excess soil* transfers between *infrastructure projects* where the *proponent* of those *projects* is the same.**
f) **If the *project area* is located on Crown land.**
g) **If the *project area* is outside of a settlement area and areas to be excavated are not an *area of potential environmental concern*, and do not include property that is or was used for an industrial property use, a garage, a bulk liquid dispensing facility, or for the operation of dry cleaning equipment.**

Building Restriction and Applicable Law under the Building Code

The Excess Soil Management Policy Framework encourages earlier *excess soil* planning to help integrate *soil* reuse considerations into planning, design and management decisions. The building permit process is one area that offers opportunities for integration. It is proposed that the Excess Soil Reuse Regulation prohibit the construction of a *building* in certain circumstances unless an ESMP has been prepared. Given that excavation often happens prior to the requirement for a building permit, this restriction is limited to situations where construction of a building requires a permit prior to *shoring* an excavation. It would also only apply if 1000m^3 or more of *excess soil* will be removed from the *project area*.

The following policy would be reflected in the new Excess Soil Reuse Regulation:

No person shall construct a *building*, if the *building* includes *shoring* unless,

a) **The Environmental Site Registry has issued a notice that an ESMP has been prepared and registered in the Registry in accordance with this regulation; or**
b) **A document has been signed by a QP certifying that the *excess soil* from the excavation associated with the construction will be less than 1000 cubic metres.**

"Construct" and "*Building*" have the same meanings as in the *Building Code Act, 1992*.

It is proposed that the applicable law requirements of the *Building Code* would be amended to reference these proposed provisions of the EPA Regulation in relation to excavations, as shown above.To verify whether the permit applicant has met applicable law, a building official would check whether the applicant has submitted a notice, generated by the Environmental Site Registry, confirming that the applicant has registered that an ESMP has been completed. Alternatively, a building official would seek written confirmation from a QP that less than 1000m^3 of *excess soil* will be generated by the project. This would mean no building permit that involves *shoring* could be issued under the *Building Code* unless one of these conditions is met.

The Building Code (O. Reg. 332/12) would reflect this policy by:

Adding a new clause to sections 1.4.1.3 (1)(a) (building permits) and 1.3.1.5(1) (conditional building permits) of the Building Code that would reference the applicable section of the Excess Soil Management Reuse Regulation to be developed.

Project Area

Many of the provisions of the proposed regulation would include the term "*project area*". This would be the area associated with a *project* that involves relocation of *excess soil*. The area may span more than one legal property boundary, but contiguity and common ownership or common charge, management or control of the area are necessary. In addition to areas of *soil* excavation and relocation, on-site storage and processing areas would be part of the *project area*. Off-site *TESSS*s and *excess soil processing sites* would not be part of the *project area*. The *project area* would typically align with the area associated with the development project for which soil management is being undertaken. A definition of "project" is also included in the definitions section.

"*Project area*" means the property owned or controlled by the *proponent* within which the *proponent*'s *project* is undertaken and if a *project* is being undertaken on more than one property, then two or more properties owned or controlled by the *proponent* may only be included as part of the same project area for a *project* where those properties are contiguous or would otherwise be considered contiguous except for separation by a road.

Plan Components

The proposed regulation would specify the minimum requirements of an ESMP. These proposed requirements are set out in Schedule A to this document, which is also proposed as the basis for a schedule to the regulation. While most of the plan contents must be completed to enable registration that an ESMP has been prepared, actual *soil* movements would be recorded later in appendices to the plan. An ESMP would be required to be updated if anything in the plan changes, if information becomes inaccurate or records need to be updated.

An ESMP required by this regulation shall be completed by a QP as defined by this regulation.

An ESMP required by this regulation shall be completed in accordance with Schedule A: Mandatory Components of an ESMP, and shall include,

i. ***project area*** **description and ownership**
ii. ***project*** **description and soil management requirements**
iii. **involved QP(s) and contractors**
iv. ***excess soil*** **sampling plan and** ***excess soil*** **characterization**
v. ***excess soil receiving site*** **locations, ownership and property information**
vi. **tracking system and description of records being kept**
vii. **statements certified by the QP and** ***proponent*** **relating to the veracity of information provided, the work under taken to support the plan, and the completeness of the plan**
viii. **a cumulative record of** ***excess soil*** **moved**
ix. **a record of plan modifications**

The following components of an ESMP must be complete before a person may register that an ESMP has been prepared: all of the headings and related information listed in Schedule A, except Appendix 4: Cumulative Record of Excess Soil Movements and Appendix 5: Table of Revision Dates.

An ESMP shall be updated as follows:

a) **A completed Appendix 4: Cumulative Record of Excess Soil Movements and Appendix 5: Table of Revision Dates, as required by Schedule A, shall be added to the plan within 14 days of the day removal of** ***excess soil*** **from the** ***project area*** **commences.**
b) **Within 14 days of the** ***proponent*** **or QP becoming aware that any information in the plan is inaccurate, including information related to site characterization, intended** ***receiving site*****, or** ***excess soil*** **movement, the plan shall be updated to correct the inaccuracy.**
c) **All outstanding updates shall be completed upon request of MOECC.**

Definition of Qualified Person

In order to ensure an ESMP is prepared in accordance with this regulation and best professional practices, it is proposed that an ESMP would need to be prepared and certified by a QP on behalf of the *proponent*.

It is proposed that the definition of "qualified person" align with that of O. Reg. 153/04. This alignment recognizes the continuity and overlap of effort associated with brownfield redevelopment and management of *excess soil*, and the comparable expertise associated with each. As such, the proposed regulation would require ESMPs to be prepared and certified by professional engineers or professional geoscientists. These professionals are regulated by professional licensing bodies with detailed rules of professional conduct and codes of ethics. Complaints may be launched against these licensed professionals with the responsible licensing body which is empowered by its enabling statute to investigate the complaint and take disciplinary action where warranted. This does not preclude the participation of others with specific qualifications to ensure that appropriate expertise is utilized where applicable, such as people with demonstrated expertise in risk assessment, agrology, cultural heritage and archaeology and traditional knowledge.

In order to help prevent potential conflicts of interest, it is also proposed that a QP who prepares an ESMP not have a direct or indirect interest in the relevant project.

> **A QP for the purpose of preparing, certifying, updating and overseeing implementation of an ESMP shall meet the requirements of section 5 of O. Reg. 153/04.**
>
> **A QP shall not act as the QP responsible for completing an ESMP for a project if the QP has a direct or indirect interest in the project.**

Excess Soil Characterization

A key component of an ESMP is the characterization of the *excess soil* to enable the determination of appropriate *receiving sites*, taking into consideration the quality of the *excess soil*. The *excess soil characterization* becomes part of the ESMP. The characterization is generally preceded by, and informed by, a phase one environmental site assessment. Each stage of undertaking an assessment of *excess soil*, including mandatory minimum sampling that applies in specified circumstances, is set out in Schedule B to this document. These requirements are proposed to be included as a separate document that could be referenced in the final regulation. If after completion of a Phase One Environmental Site Assessment and associated evaluation, rationale and certification by a QP, it is determined that intrusive testing is not required to sample and analyze the quality of the excess soil to be removed from any part

of the project area, excess soil characterization as outlined in Schedule B would not be required for those parts of the project area.

A QP responsible for preparing an ESMP shall complete, as required by and in accordance with the requirements of this regulation:

a) a phase one environmental site assessment; and

b) an *excess soil* characterization, including:

i. Preparing a sampling and analysis plan

ii. Implementing the sampling and analysis plan

iii. A review and evaluation of information and the preparation of an *excess soil* characterization report.

Receiving Sites Identification and Rules

A key objective of the proposed regulation is to ensure that *excess soil* is only deposited at *receiving sites* that are appropriate. The determination of appropriateness would be based upon requirements in a *site specific instrument or by-law*, such as a municipal by-law or an ECA under Part V of the *EPA*. If the receiving site is not governed by a *site specific instrument or by-law*, then the determination would be based upon the MOECC's proposed *Reuse of Excess Soil At Receiving Sites*. This document would describe how to determine the appropriate reuse of *excess soil* through rules, standards or approaches that apply in various circumstances.

Reuse of Excess Soil At Receiving Sites, is proposed to be included as a separate referenced document in the final regulation and the proposed mandatory requirements are highlighted in Schedule C to this document.

A QP shall identify *receiving sites* in an ESMP in accordance with the following rules:

a) If the receiving site is subject to a *site specific instrument or by-law,* the quantity and quality of *excess soil* that may be taken to that *receiving site* will be in compliance with that *site specific instrument or by-law*.

b) If the *receiving site* is not subject to a *site specific instrument or by-law*, , or the applicable *site specific instrument or by-law* does not specify the quantity or quality of *excess soil* reuse appropriate for that site, the quality and quantity of *excess soil* that may be deposited at a *receiving site* will be determined in accordance with the MOECC proposed document entitled *Reuse of Excess Soil At Receiving Sites*.

Excess Soil Tracking System

A key objective of the proposed regulation is to ensure that *excess soil* is tracked to ensure it is taken to appropriate *receiving sites*, and to allow *soil* deposited at a *receiving site* to be traced back to a particular *project area*. The regulation would require an *excess soil* tracking system to be developed by a QP on behalf of the *proponent*. Amongst other information, the tracking system would be able to produce a record of the source(s) of *excess soil*, *excess soil* quality details and intended *receiving site*(s). The tracked *excess soil* quality may include an "unknown" category if sampling results were not required or are not otherwise known.

A *proponent* of a *project* required to prepare an ESMP and the owner of an *excess soil processing site* or *soil bank* must ensure that a soil tracking system is developed and implemented, to enable the movement of *excess soil* to be tracked from the time it is excavated within a *project area* to the time it reaches the final location where it is deposited.

The QP shall ensure that the tracking system includes auditing procedures to ensure the system is being implemented, and is able to determine and generate information that produces a record of,

a) **Every location where *soil* is to be excavated within the *project area* that may produce *excess soil* or other waste soil, and in respect of each location, the amount of *soil* being excavated and the determined quality of the *excess soil* (if known)**
b) **The quantity of excavated *soil* that is reused within the *project area* and the areas within the *project area* where the excavated *soil* is reused**
c) **The quantity of excavated *soil* subject to an on-site treatment process, if any, the types of on-site treatment processes, and results of the processing**
d) **The quantity of excavated *soil* that is hazardous waste within the meaning of Regulation 347 and that is required to be disposed of at an appropriate waste disposal site**
e) **Where excavated *soil* is stored within a *project area*, *TESSS*, processing site, or soil bank, in stockpiles, the location of every stockpile and, in respect of each stockpile, the origins and amounts of excavated *soil* in that stockpile, and the quality of the *soil* in each stockpile**
f) **Procedures used to keep soils segregated based on quality category, including soils for which quality is not known**
g) **The quantity of *excess soil* that is transported from the *project area* to a *TESSS* or a *receiving site*, the locations of those sites, and the amount and quality of *excess soil* taken to each site**
h) **Inspection procedures (visual, olfactory or field testing) and testing undertaken from pre-excavation to deposition at a *receiving site***

i) **Agreement from each receiving site with regard to the intended use, which does not include stockpiling, of the excess soil at the receiving site, the quantity of excess soil required for that use, and the quality of the excess soil that is acceptable for that intended use**

j) **In respect of every truck load of *excess soil* transported from a project area to a *TESSS* for temporary storage or *receiving site* for reuse or disposal, the following:**
   i. **The date and time when the *excess soil* is removed from the *project area*,**
   ii. **The amount and quality of *excess soil* leaving the *project area*,**
   iii. **The name of the company contracted for removing the *excess soil* from the *project area* and the license plate of the vehicle responsible for hauling that load of *excess soil*,**
   iv. **For *excess soil* transported to a *receiving site* listed, the contact name and address of the *receiving site* and the route taken by the hauler to transport the *excess soil* to that site,**
   v. **Acceptance procedures undertaken at the receiving site on behalf of the proponent or *receiving site* (e.g. visual, olfactory, field testing, laboratory confirmation, weighing, record of placement, method to confirm receipt of *excess soil*)**
   vi. **For *excess soil* transported to a *TESSS* or *receiving site*, the address of the *TESSS* or *receiving site* and the route taken by the hauler to deliver the *excess soil* to that site.**

k) **In respect of every truck load of *excess soil* that is transported from a *TESSS* for temporary storage or a *receiving site* for reuse or disposal, the following:**
   i. **The date and time the *excess soil* is delivered to the *receiving site*,**
   ii. **The amount and quality of *excess soil* delivered to the *receiving site*,**
   iii. **The date and time at which the operator of the *receiving site* provided confirmation that the *excess soil* is accepted at the *receiving site*,**
   iv. **If the load of *excess soil* is not accepted for deposit at the *receiving site*, the location to which the load of *excess soil* is transported, and, if transported to a location other than the *project area* from which the *excess soil* was removed, the route taken to transport the *excess soil* to the alternate *receiving site*,**
   v. **The location on the *TESSS* or *receiving site*, including which stockpile at a *TESSS*, where the *excess soil* is deposited.**

Hauling Records

In order to help ensure that *excess soil* is tracked from a *project area* to a *receiving site*, a driver transporting a load of *excess soil* would be required to produce an *excess soil hauling record* upon

request. This record may be electronic or in paper form. The proposed required contents of this record are described below.

A *proponent* shall ensure that, for each truckload of *excess soil* leaving the *project area*, the driver of the truck is able to produce an *excess soil hauling record* at any time until the *excess soil* is deposited at the intended destination.

The driver of a truck that is transporting a load of *excess soil* shall ensure that he or she is able to produce an *excess soil hauling record* at any time from the time the truck leaves a *project area* to the time the *excess soil* is deposited at the intended destination.

An *excess soil hauling record* shall include the following, for each truckload of *excess soil*:

i. **The date and time that the *excess soil* left the *project area,***
ii. **The location/address of the property or properties comprising the *project area,***
iii. **The name and contact information of the QP for the *project* or another contact for the *project* who can accurately verify the information contained in the hauling record,**
iv. **The approximate volume and weight of *excess soil* being transported,**
v. **The quality of the *excess soil* being transported (by category, if known),**
vi. **The name and contact information of the hauling company,**
vii. **A specific truck identifier (e.g. licence plate, truck number, bar code),**
viii. **The haul route that the truck will be using,**
ix. **The address of the *receiving site* or *TESSS,***
x. **Date and time *excess soil* is deposited at the *receiving site,***
xi. **A declaration by an *authorized person* for the *project* verifying the information in the record at the time it leaves the *project area,* and**
xii. **A declaration by an *authorized person* for the *receiving site* verifying soil was deposited at the *receiving site* and the volume of *soil* received.**

A copy of the *excess soil hauling record* shall be provided to the *proponent* and the *owner* of the *receiving site* by the hauling company.

Cumulative Record of Excess Soil Movements and Excess Soil Movements

As a component of the broader tracking system, the proposed regulation would require a *proponent* that is required to develop an ESMP to maintain a cumulative record of *excess soil* movement. This is a record of the total amount of *excess soil* and the quality of the soil that has been moved to each *receiving site* at any point in time.

A *proponent* that is required to prepare an ESMP shall maintain a cumulative record of *excess soil* movements from the *project area*.

The *proponent* shall make the cumulative record of *excess soil* movements available at the *project area* upon the request of MOECC for the duration of *excess soil* management activities at the *project area*.

The *proponent* shall prepare a cumulative record of *excess soil* movements within 14 days of the movement of *excess soil* from the *project area*, and every 14 days thereafter, and the *proponent* shall update the record as soon as reasonably possible upon request of MOECC.

A cumulative record of *excess soil* movement shall include the following, in respect of *excess soil* transported from a *project area* to a *receiving site* or *TESSS*, and in respect of *excess soil* moving from a *TESSS* to a *receiving site*:

- **a) An identification of every *receiving site* or *TESSS* to which *excess soil* was transported;**
- **b) For each *receiving site* or *TESSS*,**
  - **i. The quantity of *excess soil* delivered**
  - **ii. An identification of the hauling company or companies used**
  - **iii. The date(s) that *excess soil* was moved to the *receiving site* or *TESSS***
  - **iv. The quality of *excess soil* delivered**

Registration of Information on the Environmental Site Registry

To provide transparency, accountability, and tracking regarding *excess soil* movements, a QP, on behalf of a *proponent*, would be required to register to the public Environmental Site Registry that an ESMP has been prepared in accordance with the regulation, prior to any *excess soil* being moved from a *project area*. This registration would be updated as *excess soil* is moved to include information related to *soil* movements. Upon registration, the person who did the registration would receive an electronic letter from the Environmental Site Registry confirming registration.

If this regulation requires a *proponent* to develop an ESMP, a QP authorized by the *proponent* shall register the following information to the Environmental Site Registry, in a manner approved by the Director:

- **a) At the time of commencing a registry record for a particular *project*, the following information:**
  - **i. *Project area* location and category of *project* being undertaken,**
  - **ii. Name and contact information for *proponent*(s),**
  - **iii. Name, contact information, and designations of the QP(s), and**
  - **iv. A declaration that an ESMP has been prepared and will be updated in accordance with this regulation.**

b) Before *excess soil* is moved from a *project area*, the following information will be added to the registry:

- **i. The quantity of excavated *soil* to be managed, including amount of *soil* to be reused on-site and amount of *excess soil*,**
- **ii. A breakdown of the *excess soil* into different quality categories in accordance with the proposed *Reuse of Excess Soil At Receiving Sites*, and**
- **iii. The location of all destinations to which *excess soil* is to be moved, including *receiving sites*, *TESSSs*, processing facilities and landfills, and intended reuse in relation to *receiving sites*.**

c) Within 14 days of any *excess soil* leaving the *project area*, and every 28 days thereafter, the following will be added or updated in the Registry, unless no *excess soil* was moved during a 28-day period:

- **i. The name and contact information of *excess soil* hauling companies being used,**
- **ii. The cumulative quantity of *excess soil* deposited at each *receiving site*, including any *excess soil* moved to or from a *TESSS,* and**
- **iii. The quality category of the *excess soil* relocated to each destination categorized in accordance with the proposed *Reuse of Excess Soil At Receiving Sites*.**

Inaccurate information in the Environmental Site Registry shall be corrected within 28 days of a *proponent*, or a QP acting for a *proponent*, or an *owner* of a soil processing site or *soil bank* operator becoming aware of the inaccurate information.

It is proposed that the Environmental Site Registry also be used to enable registration of information associated with certain *receiving sites*, both to assist with compliance and, over time, as more sites are added, to facilitate matching between *proponents* needing to relocate *excess soil*, and *receiving sites* wishing to accept *excess soil*. Public bodies that oversee large commercial *receiving sites* would be able to require them to register that they are accepting *excess soil*, for example. To this end, MOECC is proposing that landfills with an ECA under the *EPA* would be required to register that they are a receiving site for *excess soil* and to provide information on the Environmental Site Registry related to the soil they receive.

The *owner* or operator of a landfill approved under Part V of the Environmental Protection Act shall register and maintain in the Environmental Site Registry, in the form approved by the Director, the following information:

- **a) Location of the landfill**
- **b) Contact information for the landfill facility**
- **c) The quality category of *excess soil* that may be deposited at the landfill**
- **d) The quantity of *excess soil* deposited annually, and the percentage used as daily cover**

Some *excess soil* movements would be required to be registered to the Environmental Site Registry despite the proponent being exempt from the requirement to prepare an ESMP. These include movements of *excess soil* occurring between infrastructure projects with the same proponent, and movements of 1000m^3 or more of excess soil resulting from maintenance of stormwater ponds.

The following are required to register and maintain information in the Environmental Site Registry as specified below:

- **a) The *proponent of* an *infrastructure project* who is exempt from preparing an ESMP because the *excess soil* is moving between *infrastructure projects* belonging to that *proponent,* and**
- **b) The *proponent* of a project that consists of stormwater pond maintenance, if more than 1000m^3 of *excess soil* is generated.**

The *proponent* of a project listed above shall register and maintain in the Environmental Site Registry, in the form approved by the Director, the following information:

- **a) At the time of commencing a registry record for a particular *project*, the following information:**
  - **i. *Project area* location and category of project being undertaken,**
  - **ii. Name and contact information for *proponent*(s),**
  - **iii. Name, contact information, and relevant qualified professional(s), and**
- **b) Within 14 days of any excess soil leaving the project area, and every 28 days thereafter, the following will be added or updated in the Registry, unless no excess soil was moved during that 28-day period:**
  - **i. The name and contact information of *excess soil* hauling companies being used,**
  - **ii. The cumulative quantity of *excess soil* relocated to each *receiving site*, including any *excess soil* moved to or from a *TESSS,* and**
  - **iii. The quality category of the *excess soil* relocated to each destination categorized in accordance with the proposed *Reuse of Excess Soil At Receiving Sites*, if known.**

Hazardous/Liquid Waste & On-Site Soil Processing

Excavated or *excess soil* that is hazardous waste as defined in Regulation 347 would remain designated as a waste throughout its lifecycle and be subject to the regulatory requirements associated with hazardous waste e.g., section 17.2, which addresses matters including storage, handling, and record-keeping, and sections 18-24 which contain generator registration and manifesting requirements. Further information can be found in the MOECC document "Registration Guidance Manual for Generators of Liquid Industrial and Hazardous Waste" (https://www.ontario.ca/page/registration-guidance-manual-generators-liquid-industrial-and-hazardous-waste).

Excavated *soil* would be designated as a waste if it is *liquid waste.* This is intended to include *soil* excavated by way of a vacuum truck and mixed with liquid.

On-site soil processing is important to encourage on-site or local reuse of excavated soil. Soil excavated within a *project area* would be designated as a waste if it is to be, or has been, processed on-site in certain ways, and would cease to be designated as a waste if it is reused on-site after processing. These activities all involve application of energy or additives to excavated *soil* for the purposes of effecting physical or chemical change. These activities would be subject to ECA requirements under sections 27, 40 and 41 of the *EPA*. Other types of *soil* processing on-site that are more passive in nature and do not require energy or additives, would not require an ECA (note, however, that other approval requirements may apply under section 9 of the *EPA*). The regulation would provide a clear list of exempted activities; these are set out for comment below.

> ***Soil* is designated as a waste at the moment the *soil* is excavated if,**
>
> i. **the *soil* is *hazardous waste*,**
> ii. **the *soil* is a *liquid waste*, other than sediment**
> iii. **the *soil* is to be subject to *on-site soil processing***
>
> **Any *soil* that is reused within the *project area* after being subject to approved *on-site soil processing* ceases to be a waste at the moment the *on-site soil processing* is complete in accordance with the ECA and the soil is reused; stockpiled processed *soil* remains designated waste until such time as it is reused on the property.**
>
> **Hazardous waste continues to be designated as waste despite any on-site processing and must be relocated in accordance with regulations applicable to hazardous waste.**
>
> **The following activities related to the on-site management of *soil* are exempt from waste approval requirements:**
>
> i. **Passive aeration**
> ii. **Passive drainage of excavated *soil* generated on-site (other than *soil*s that meets the definition of "liquid waste" set out in Regulation 347)**
> iii. **Mixing of excavated *soil* generated on-site**
> iv. ***Soil* turning**
> *v.* ***Applied chemical and/or biological treatment of in-situ soil***

Taking into consideration the list of exempted *soil* processing activities above, *soil* subject to the following types of *on-site soil processing* would be a waste and the following types of processing are examples of activities that shall require a waste approval under the Environmental Protection Act:

i. *Applied chemical and/or biological treatment of ex-situ soil*
ii. *Landfarming*

iii. *Soil washing*
iv. *Forced aeration/vacuum treatment*
v. *Soil heating*

Excavated Sediment

Excess soil may include excavated sediment unless it is liquid waste. Excavated sediment that is *liquid waste* would be required to be dewatered before being managed as *excess soil.*

Sediment that is dewatered such that it does not meet the definition of *liquid waste* prior to leaving a *project area* is *excess soil*, and sediment that is not dewatered and meets the definition of *liquid waste* shall be managed as *liquid waste*.

Temporary Excess Soil Storage Sites (TESSS)

A *TESSS* is a site that is separate from the *project area* where *excess soil* is temporarily stored before being moved to a receiving site. Temporary storage may enable a wider range of *receiving sites* to become available for reuse of the *excess soil*. It is proposed that waste ECAs would not be required for these sites, provided key requirements are met, such as having a confirmed receiving site, and storing the *excess soil* for a maximum of 2 years, as described below.

Sections 27, 40 and 41 of the EPA do not apply to a *TESSS* provided the following apply:

a) **A *public body* or the *proponent* of the *project* from which the *excess soil* originates owns or has charge, management or control of the property on which the *TESSS* is located**
b) **The *excess soil* is not stored at the *TESSS* site for a period of more than two years from the date that *excess soil* is brought to the site, or another period specified by the Director**
c) **The *receiving site(s)* for the *excess soil* being stored at the *TESSS* are known and are appropriate for the quality and quantity of *excess soil* being stored**
d) **No processing of *excess soil* to reduce the concentration of contaminants is undertaken at the *TESSS***
e) **No *liquid waste* is deposited at the site**

The person who owns or has charge, management or control of the *TESSS* shall ensure that the following requirements are met:

a) ***excess soil* from different *project areas* remains segregated unless it is of the same quality standard and is destined for the same *receiving site***
b) **records are maintained of the following information:**

i. **addresses of the *project areas* from which the *excess soil* originated and soil analytical results from each *project area***
ii. **the dates that *excess soil* was received from each *project area* and volume and quality of *excess soil* received**
iii. **for each segregated *excess soil* stockpile, the *project area* from which it originated, quality and quantity of *excess soil***
iv. **the confirmed *receiving sites* as detailed in the applicable ESMP(s) and the date on which the *receiving sites* can start to receive the relevant *excess soil***
v. **the dates that *excess soil* left the *TESSS* for relocation to the receiving site**

c) ***excess soil* is managed to prevent any adverse effect associated with the stored *excess soil*, including management of:**
i. **noise**
ii. **dust**
iii. **mud tracking**
iv. **run-off and erosion**

d) **make the records described above available to the MOECC upon request**

Operational Requirements for Excess Soil Processing Sites Including Soil Banks

Soil banks and *excess soil processing sites* are both important to enabling *excess soil* reuse. This proposal does not distinguish between these two types of facilities as it is anticipated they would often occur at the same location. Both types of sites would accept *excess soil* from other persons with a view to storing and/or remediating the soil before sending it to another site for reuse. Once the *excess soil processing site* or *soil bank* accepts the *excess soil* – which at that point is still designated as a waste - it would take responsibility for it, and would be required to have an ECA in place (sections 27, 40 and/or 41 of the *EPA* would apply). Unlike for *TESSSs*, there would be no predetermined time limit for storage of *excess soil* at these sites, and financial assurance would typically be required. Some record keeping and common management requirements are proposed to be included in the regulation. Other requirements would continue to be specified in the respective ECAs.

The *owner* of an *excess soil processing facility or soil bank* shall ensure the following is done:

a) **maintain records of the following information:**
i. **with regard to each *project area* from which *excess soil* was received,**
1. **the name and contact information of the *proponent* and any QP that completed or supervised the *excess soil* characterization related to the *excess soil* received**
2. **the municipal address or legal description of the *project area***
3. **the date(s) on which *excess soil* was received from the *project area***

4. **the volume and quality of the *excess soil*, including soil analytical results from the *project area* if they were required for an ESMP, or are otherwise available**

ii. **with regard to each *receiving site* that receives *excess soil* from the *excess soil processing facility* or *soil bank,* the same information as is listed under sections 11 and 12 of Schedule A to this document**

b) **manage *excess soil* to prevent any adverse effect associated with the storage or processing of the *excess soil*, including management of:**
   i. **noise**
   ii. **dust**
   iii. **mud tracking**
   iv. **run-off and erosion**

c) **make the records described above available to the MOECC upon request**

d) **upon approval of the *excess soil processing facility* or *soil bank*, register the following information to the Environmental Site Registry:**
   i. **Name and contact information for the *excess soil processing facility* or *soil bank***
   ii. **Location of processing facility and information on processes undertaken**
   iii. **Quantity of *excess soil* being processed, annually**
   iv. **Within 14 days of any *excess soil* leaving the *excess soil processing facility* or *soil bank* , and every 28 days thereafter, unless no *excess soil* was moved during that 28-day period, the following:**
      a. **Name and contact information of *excess soil* hauling companies being used**
      b. **Location of all destinations to which *excess soil* was moved, including *receiving sites* and landfills, and the land use of the *receiving sites***
      c. **The cumulative quantity of *excess soil* relocated to each *receiving site***
      d. **The quality category of the *excess soil* relocated to each destination categorized in accordance with the proposed *Reuse of Excess Soil At Receiving Sites***

e) **Inaccurate information in the Environmental Site Registry shall be corrected within 28 days of a *proponent*, a QP or the *owner* of an *excess soil processing facility or soil bank* becoming aware of the inaccurate information.**

Circumstances When Hauling Excess Soil is Exempt from ECA Requirements

Under the *EPA* and Regulation 347, waste management systems (which include waste haulers) are required to obtain ECAs or, in some cases, be registered on the Environmental Activity and Sector Registry (EASR) in accordance with O. Reg. 351/12. The proposed amendments would remove this requirement in relation to haulers transporting *excess soil* to *TESSSs* or *receiving sites.* ECAs (or EASR

registrations) would still be required for haulers transporting *excess soil* to waste disposal sites that are subject to ECAs (including *excess soil processing sites*, *soil banks* and landfills). Hauling of sediment would also be exempt for an ECA or EASR requirement. In all cases, haulers of *excess soil* would still be subject to the operating standards for waste management systems set out in section 16 of Regulation 347.

Any hauler of *excess soil* would also be required to be able to produce an *excess soil hauling record* as described earlier in this document.

> **Sections 27, 40 and 41 of the Act do not apply to the transportation of *excess soil* from a *project area* to:**
>
> **i. a *TESSS*, or**
>
> **ii. a *receiving site*, other than a waste disposal site**
>
> **Sections 27, 40 and 41 of the Act do not apply to the transportation of *excess soil* or *liquid waste* if it is sediment.**

Managing Excavated Soil That is Liquid Waste

The definition of *excess soil* in the proposed regulation would exclude *liquid waste* as defined in Regulation 347. This means that vehicles transporting excavated soil that is *liquid waste*, would be regulated as waste management systems under ECAs. ECAs could impose conditions on the types of methods that vacuum trucks may use to excavate soil – including any chemicals they may add to the ground to assist in removing soil.

If excavated soil that is *liquid waste* is taken to a site to be dewatered before reuse, this processing activity would also be subject to ECA requirements. The dewatering site could be regulated as a standalone waste disposal site, or could be addressed in the ECA for the vacuum trucks (as a waste management system) if the person to whom the approval is issued is the same for both.

The Director would consider imposing site specific conditions in any ECA for *liquid waste* dewatering to help avoid nuisance or a hazard to the environment or the public, including conditions restricting waste volumes, operating hours, processing methods, nuisance impacts and *soil* reuse options based on *soil* quality test results. ECAs under section 53 of the Ontario Water Resources Act may be required if the site uses or establishes a sewage works to deal with drainage and/or stormwater, as well as under section 9 of the *EPA* to address air impacts such as dust, noise and odour.

> **No person shall deposit *liquid waste* at a *receiving site* other than at an *excess soil processing site* or other waste disposal site that is subject to an ECA issued under the *EPA*.**

Sites that accept *liquid waste* from vehicles that are approved under the *EPA* for transport of *liquid waste* shall require an ECA under the EPA.

The requirements specified above that apply to an *excess soil* processing facility, including record keeping and registration, apply with regard to a facility that is part of a waste management system handling *excess soil*, including *excess soil* that is *liquid waste*.

Managing Materials Other than Excess Soil

Materials other than *excess soil* must be managed in accordance with other requirements of Regulation 347 or other applicable legislation and regulations. It is proposed that these other materials be separated from *excess soil*.

Record Keeping

Record keeping is an integral part of tracking and traceability of *excess soil* movements. Records required to be generated by this proposed regulation would be required to be retained for a minimum of five years.

The *proponent* of a *project* required to prepare an ESMP and the QP responsible for preparation of an ESMP shall retain a copy of the ESMP for at least five years after completion of the *excess soil* movement(s).

The *proponent* and *receiving site owner* shall retain a copy of the cumulative record of *excess soil* movement for at least five years after the completion of *excess soil* movements.

A copy of the *excess soil hauling record* shall be retained by the *proponent*, the hauling company and the *owner* of the *receiving site* for at least five years following the date of deposit of the *excess soil* to a *receiving site*.

A record listed above shall be provided to MOECC upon request.

Transition

Transition provisions would be included in the proposed Excess Soil Reuse Regulation that would take into consideration projects that are substantially planned, approved or underway. Various proposed requirements could be transitioned in through practical implementation considerations (e.g. tracking and record keeping requirements may be more practical to implement even if a project's planning is well-underway).

It is anticipated that new, and some existing site specific instruments, such as licences or permits under the Aggregate Resources Act, may align the instrument's requirements with proposed requirements in this regulation, such as those outlined in Schedule C regarding reuse of excess soil at receiving sites.

AMENDMENTS TO REGULATION 347 (GENERAL-WASTE MANAGEMENT)

Currently, under Regulation 347, it is unclear when *excess soil* is a waste and whether ECA requirements apply to the management of *excess soil*. Several provisions proposed in the Excess Soil Reuse Regulation help to clarify when *excess soil* is a waste and when ECAs under the *EPA* are required. Because of that, Regulation 347 would be amended to clarify that *excess soil* is no longer a component of "inert fill".

Inert Fill Definition

Currently, in Regulation 347, soil may be interpreted as being a part of "inert fill" and application of this provision has been inconsistent and inadequate for *excess soil*. With the new proposed regulation, the inert fill provision would no longer be needed in relation to *excess soil*; however, it may be needed for the management of non-soil materials. It is proposed that the definition of "inert fill" be amended to clarify that excess soil is not considered inert fill.

> **"inert fill" means earth or *rock* fill or waste of a similar nature that contains no putrescible materials or soluble or decomposable chemical substances, and does not include *excess soil* as defined by the Excess Soil Reuse Regulation.**

O. REG. 153/04 (RECORD OF SITE CONDITION) REGULATION AMENDMENTS

Alignment with the Proposed Excess Soil Reuse Regulation

The following amendments to Ontario Regulation 153/04 are proposed in order to appropriately align soil management at record of site condition (RSC) properties with the *Excess Soil* Reuse Regulation.

1. **Soil Brought to an RSC Property:** Ontario Regulation 153/04 currently contains requirements related to soil that is brought from other properties to a property for which a RSC will be filed (RSC property). These include requirements governing the quality of the soil brought to the RSC property and sampling and analysis requirements. The current requirements governing *excess soil* that is brought to RSC properties can be found in section 55, specific sections of Schedule E to O. Reg 153/04, including sections 31 to 34, and Schedule F to O. Reg. 153/04. These provisions will be amended in order to align them with the proposed *Excess Soil* Reuse Regulation.

   Specifically, the current provisions require soil to meet Table 1 of the Ministry's Soil, Ground Water and Sediment Standards (also known as the "background standards") if the property use is residential, agricultural, community, institutional or parkland. Rather than requiring that soil imported to RSC properties with such uses meet Table 1, the relevant provisions of O. Reg. 153/04 would be amended to allow soil to be brought to these RSC properties as long as the soil meets the applicable soil quality requirements specified in the Ministry's proposed "*Reuse of Excess Soil At Receiving Sites*", for the use specified in the RSC. *Excess soil* being brought to a property that has not been sampled as part of an ESMP would remain subject to sampling requirements outlined in Section 34 of Schedule E. Amendments are proposed to clarify that fill at an RSC property that was subject to ESMP sampling requirements will be considered of known quality, and if no sampling was completed it will be considered of unknown quality (i.e. a PCA).

   Provisions related to bringing soil to an RSC property in Section 55, Schedule E and Schedule F would be amended to align with the proposed *Excess Soil* Reuse Regulation.

2. **Stockpile Sampling:** The stockpile sampling requirements found in Table 2 in Schedule E of O. Reg. 153/04 will be amended to align with the sampling requirements for stockpiles being proposed for the *Excess soil* Reuse Regulation.

   Table 2 of Schedule E (Phase Two Environmental Site Assessments) will be amended per the stockpile sampling requirements in the proposed Excess Soil Reuse Regulation.

3. **Sampling Outside of Areas of Potential Environmental Concern (APEC):** Soil that is excavated and removed from areas of a RSC property outside of APECs / impacted areas, where the property is used or has been used, in whole or in part for an industrial use, as a garage, as a bulk liquid dispensing facility including a gasoline outlet or for the operation of dry cleaning equipment, would need to be sampled in accordance with the proposed *Excess soil* Reuse Regulation.

   A new requirement will be added to O. Reg 153/04 to require sampling outside of APECs for industrial properties in a manner consistent with the proposed Excess Soil Reuse Regulation.

Further Proposed Amendments

The following proposed amendments to O. Reg. 153/04 have limited relationship to *excess soil* but are proposed as part of this regulatory package to provide clarity and reduce unnecessary burden on the regulated community. The amendments would not fundamentally change O. Reg. 153/04, but would address specific circumstances that have proven difficult to implement for a variety of reasons.

1. **Delineation:** Currently, O. Reg. 153/04 requires vertical delineation of contaminants of concern to applicable site condition standards as part of a phase two environmental site assessment (ESA). Stakeholders have indicated that meeting the delineation requirements in Schedule E of O. Reg. 153/04 poses certain practical challenges when undertaking a risk assessment. An amendment is proposed to Schedule C of O. Reg. 153/04 to add a new component to the risk assessment process to deal with these challenges. Specifically, an applicant would be able to request that the MOECC provide relief from the rules governing how contaminants are to be delineated at a RSC property undergoing risk assessment.

   The timing for this request to the MOECC for relief of delineation requirements would be prior to submission of the Pre-Submission Form, optimally near the completion of phase two ESA work when challenges become apparent and mitigation efforts to resolve them have been exhausted.

   As part of having a risk assessment accepted for a property under section 168.5 of the *EPA*, the Director may provide relief from delineation requirements to applicable site condition standards based on the following specified conditions:

   i. **all contaminants of concern are identified;**
   ii. **maximum concentrations are identified for all contaminants of concern;**
   iii. **all reasonable efforts to delineate to the applicable site condition standards were undertaken;**
   iv. **the property is appropriately characterized;**
   v. **additional delineation will not lead to an improved understanding of the distribution of contaminants; and**

vi. **there are practical or negative environmental reasons that are impediments to further delineation to the applicable site condition standards.**

If the Director is satisfied with evidence in the QP's submission that these conditions have been satisfied, the Director would then be in a position to issue a notice granting relief from the delineation requirements in Schedule E. Schedule A to O. Reg. 153/04 would also be amended requiring the QP to include this information in the RSC, so that a person examining the property's RSC will know that such relief from Schedule E delineation requirements as part of a risk assessment has been granted. Related consequential amendments would be necessary in a number of sections of O. Reg. 153/04.

2. **Substances used for purpose of safety under conditions of snow/ice:** Currently, substances are deemed to not exceed applicable site condition standards if they are used on a highway for the purpose of safety for traffic under conditions of snow or ice. This exemption does not apply if substances (e.g. salt) are used for safety under conditions of snow or ice outside of a highway (e.g. sidewalks, parking lots). However, activities undertaken to satisfy the requirements to file a RSC, including the undertaking of a risk assessment where salt is the only substance that exceeds the applicable site condition standard, may not lead to significant environmental or human health benefits.

   Subsection 48 (3) of O. Reg. 153/04 would be amended such that, if a QP determines that an applicable site condition standard is exceeded at a property solely because a substance has been used for the purpose of traffic and pedestrian safety under conditions of snow/ice, the standard is deemed not to be exceeded.

3. **Converting low-rise commercial *buildings* to mixed use:** Converting the upper floors of low rise commercial *buildings* to residential use currently triggers a requirement for an RSC. In this situation undertaking the assessments and any remediation required for an RSC could be challenging if the *building* is not being demolished and rebuilt. The requirement for an RSC may also be a disincentive to reuse of some *buildings*, for example in old downtown areas.

   An amendment would allow property owners that are renovating a portion of a low-rise commercial use *building*, but not demolishing and rebuilding or altering the *building* footprint, to convert upper floors to residential without requiring a RSC. This exemption would not apply to similar renovations in larger *buildings*, or where the property has been used for an industrial or specified commercial property uses (garage, bulk liquid dispensing facility, including a gasoline outlet, or dry cleaner). Subsequent conversion of the ground floor from commercial to residential use would require the filing of an RSC.

   A provision would be added to the RSC regulation to exempt from section 168.3.1 of the *EPA* a change in the use of property where:

1. **the change in property use is from commercial (other than a use described in clause (b) of subsection 32 (1) of O. Reg. 153/04) to residential**
2. **the change in property use is to take place within an existing *building* no greater than four storeys in height and will be limited to the portion of the *building* above the first storey above grade (i.e. the ground floor remains commercial);**
3. **the ground floor and any below grade structures are not being redeveloped or replaced, and the footprint of the *building* will remain the same after the change in property use.**

It is proposed that section 15 of O. Reg. 153/04 be amended such that an RSC would be required prior to converting the ground floor from commercial property use to residential of a *building* whose *owner* had earlier availed him or herself of the exemption outlined above, and prior to rebuilding a new mixed use building at such a property.

4. **Temporary roads related to development:** Roads are sometimes installed temporarily for emergency, construction and temporary residential use to service unfinished residential developments. This is often associated with phased development where roads accessing the development change as new phases are developed. The current definition of "road" in O. Reg. 153/04 does not distinguish between temporary roads and more permanent roads, and because roads are part of "community use", an RSC may be required before a temporary road is converted to a residential use. It is proposed that O. Reg. 153/04 be amended such that the use of property as a temporary road would not, for that reason alone, trigger the need for a RSC when the property is converted to a residential use.

   Subsection 1 (1) of O. Reg. 153/04 would be amended such that the definition of "road" does not include a road temporarily constructed and that is recognized as temporary in a planning or development approval (i.e. the temporary road would retain the past use, similar to vacant land, until changed to another use).

5. **Treated drinking water:** Exceedances of applicable site condition standards can occur in ground water when by-products of treated drinking water react with organic matter. For example, leaky municipal water mains or large scale purges of municipally treated drinking water can lead to the exceedance of applicable site condition standards of such substances as chloroform and bromoform. An amendment to O. Reg. 153/04 would allow for exceedances at RSC properties where a QP determines that a standard is exceeded solely because of the presence of treated drinking water by-products.

   O. Reg. 153/04 would be amended such that an applicable site condition standard is deemed not to have been exceeded if a QP determines that the standard is exceeded at a property solely because the substance is associated with drinking water treatment.

Whether a standard is deemed not to exceed a standard would depend on the substance being associated with a process, or process train, used for drinking water treatment in accordance with the Safe Drinking Water Act, 2002.

6. **Naturally elevated concentrations of substances:** In certain areas of the province, soil contains naturally elevated concentrations of substances. If the presence of a substance did not result directly or indirectly from human activity, it is not considered a "contaminant" under the *EPA* and is therefore not required to be investigated under O. Reg. 153/04, even if it exceeds an applicable site condition standard. When soil containing naturally-occurring elevated concentrations of substances is excavated and moved to a different location, however, those substances are considered "contaminants" and must be investigated as part of the phase two environmental site assessment. An amendment to O. Reg. 153/04 would clarify that a substance in fill that was deposited at a property prior to the ESA (i.e. through historical activity) is deemed to not exceed the applicable site condition standards if the QP determines that the concentration of the substance does not exceed local naturally occurring concentrations. The QP would demonstrate this through such activities as comparing analyses of samples collected at the property to results of comparable analyses of samples from within the same municipality or an adjacent municipality. The fill would have had to be deposited at the property prior to any environmental site assessment work, and would still need to be identified as a *PCA*.

   Part IX of O. Reg. 153/04 would be amended to indicate that an applicable site condition standard is deemed not to have been exceeded if a QP demonstrates that the standard is exceeded at the property solely because of the deposition of fill prior to environmental site assessments and that the concentration of a substance in the fill does not exceed naturally occurring concentrations of that substance found within the municipality or an adjacent municipality.

7. **Day care centres:** O. Reg. 153/04 uses the term "day-care centre" in subsection 1 (3) but does not define it. An amendment would update this term to be consistent with the *Child Care and Early Years Act, 2014.* These amendments would serve to clarify that a "child care centre" licenced under that Act is an "institutional use" as defined under O. Reg. 153/04.

   Subsection 1 (3) of O. Reg. 153/04 would be amended to replace "day-care centre" with "child care centre", and subsection 1 (1) would be amended to add the term "child care centre"; that term would be defined as it is defined in the *Child Care and Early Years Act, 2014.*

8. ***Buildings* used for indoor gatherings of people for religious purposes** – Currently, *buildings* used for indoor gatherings of people for religious purposes are a type of "community use" under O. Reg. 153/04. This results in RSCs being required prior to converting such *buildings* to a residential use. However, *buildings* used for indoor gatherings of people for religious purposes tend to have uses and activities similar to schools; many house daycares, and have historically been located mostly in

residential areas. An amendment to O. Reg. 153/04 would remove *buildings* of this nature from the definition of "community use" and place them within the definition of "institutional use". This would: (1) allow a change of property use from a *building* used for indoor gatherings of people for religious purposes to residential use, without requiring the filing of an RSC; and (2) require the filing of an RSC in order to change the use of property from industrial, commercial or community to a *building* used for indoor gatherings of people for religious purposes.

Subsection 1 (3) of O. Reg. 153/04 would be amended to remove *buildings* used for indoor gatherings of people for religious purposes from "community use" and add them to the definition of "institutional use".

ENVIRONMENTAL SITE REGISTRY AND EXCESS SOIL

Prescribing a New Purpose of the Environmental Site Registry

Subsection 168.3 (2) of the *EPA* outlines the purposes of the Environmental Site Registry, and provides that other purposes may be prescribed. It is proposed that an additional purpose be prescribed relating to *excess soil*. MOECC is currently exploring different organizational models, including a third party to deliver various market based tools and programs to support *excess soil* management, including an online registry to track *excess soil* movements.

> **For the purpose of paragraph 3 of subsection 168.3 (2) of the *EPA*, the Registry has the purpose of facilitating public access to information respecting ESMPs and the movement of *excess soil*.**

Delegation of Operation of Excess Soil-related aspect of Environmental Site Registry to Third Party
Section 168.9 of the *EPA* provides that the Minister may enter into an agreement to delegate any of the Director's powers and duties relating to the establishment, maintenance and operation of the Environmental Site Registry to an individual, corporation or partnership. The agreement may contain any limitations, conditions and requirements on the delegation that the Minister considers advisable. It is proposed that the Minister enter into such an agreement with a third party organization to delegate relevant powers and duties to it, allowing it to operate the *excess soil*-related part of the Environmental Site Registry. Conditions on the delegation could address the ability of the Minister to appoint officers to the organization, as well as financial matters such as fees.

Section 168.9 of the *EPA* further provides that such a delegation is not effective unless the Minister makes a regulation in respect of the delegation. It is therefore proposed that the Minister make a regulation to prescribe the powers and duties that are to be delegated by the agreement; and specify the individual, partnership or corporation to which the powers and duties are to be delegated.

The agreement could address such things as the Minister's authority to appoint officers to the third party entity, as well as financial matters such as fees.

Schedule A: Mandatory Components of an ESMP

1. The QP preparing an ESMP required by this regulation shall ensure that the ESMP includes sections with the following headings:
    1) Property Description and Ownership
    2) Project Description and Soil Management
    3) QP(s) and Contractor(s)
    4) *Excess soil* Sampling Plan Summary and Characterization Summary
    5) *Excess soil Receiving Sites* Summary
    6) Tracking System and Record Keeping Summary
    7) Certifications
    8) Appendix 1: *Excess soil* Characterization
    9) Appendix 2: Tracking System Details
    10) Appendix 3: *Excess soil Receiving Sites* and Associated Information
    11) Appendix 4: Cumulative Record of *Excess soil* Movements
    12) Appendix 5: Table of Revision Dates

2. The section of the ESMP with the heading **Proponent and Project Area Description** shall include the following information:
    a. Information on the *proponent*, including:
        i. The name, mailing address, postal code, e-mail address and telephone number of the *proponent* who has prepared or has authorized the preparation of the ESMP.
        ii. If the *proponent* is a firm, company or partnership, the name of the person who authorized the preparation of the ESMP on behalf of the firm, company or partnership.
    b. A description of the *project area*, including:
        i. a legal description of the properties comprising the *project area*
        ii. a list of the owner(s) of the property or properties comprising the *project area* and a description of the nature of their interest(s)
        iii. any municipal addresses, assessment roll numbers and property identifier numbers applicable to the properties comprising the *project area*, and
        iv. geographic coordinates of the centroid of the property measured using a Global Positioning System receiver and projected on the UTM grid coordinate system identifying easting, northing and zone based on NAD 83 datum.

3. The section of the ESMP with the heading **Project Description and Soil Management** shall include the following information:
    a. Map of the *project area* that is to scale and that includes:
        i. Boundaries of the property or properties comprising the project area
        ii. *Project area* boundary

iii. Structural features, including *buildings* and paved surfaces, and natural features
iv. Delineated areas of excavation, with references to related site assessment results
v. Delineated areas of stockpiles with references to stockpile information for tracking purposes, if relevant
vi. Delineated areas of soil processing, with reference to processing information, if relevant
vii. Delineated areas of soil reuse areas within the *project area*, if relevant

b. A description of the current use or uses of the *project area* and their location within the area
c. A general description of the proposed *project*, including proposed land use and activities, proposed major *buildings* or other proposed structures
d. A description of the soil management activities within the *project area*, including:
   i. The volume and quality of soil to be removed from identified excavation areas
   ii. The volume and quality of soil needed in identified soil reuse areas
   iii. The volume and quality of soil to be stockpiled on-site
   iv. The volume and quality of soil to be processed on-site, and the intended type of processing to be undertaken, as well as the expected qualities and quantities of soil post-processing.
   v. The general movements of soil around the *project area*
   vi. The estimated volume and quality of soil to leave the *project area* as *excess soil*
   vii. The estimated volume and quality of soil to be brought onto the *project area*
   viii. The anticipated dates on which excavation will begin, that *excess soil* will commence leaving the *project area*, and that all *excess soil* will have left the *project area*
e. A description of steps to be taken to maximize reuse of soil within the *project area*, including any soil processing or storage, on or off-site, any project design features enabling significant reuse, and, if soil is to be brought onto the *project area* that did not originate in the *project area*, a rationale why *excess soil* from the *project area* could not be used.
f. A description of other waste materials expected to be managed within the *project area* and a description of how these materials will be managed relative to the soil management to ensure proper management of each
g. With regard to any ***TESSS*** to be used for management of *excess soil* from the *project area*, the following:
   i. Municipal address or, if relevant, legal description of the location of the property
   ii. Confirmation of ownership or charge, management or control by the *proponent*
   iii. A list of any applicable legal instruments relevant to soil management at the site

iv. Volume and quality of material to be stored at the *TESSS*
v. A list of *receiving sites* that have agreed to accept the *excess soil* stored at the *TESSS*, and approximate date that the *receiving site* will be able to accept that *excess soil*
vi. A description of whether the *excess soil* will be mixed with *excess soil* from another *project area* and confirmation that this will not affect the ability of that *excess soil* to be reused at the listed *receiving site*

4. The section of the ESMP with the heading **QPs and Contractors** shall include the following information:
    a. With regard to the QP(s) responsible for the preparation and implementation of the ESMP:
        i. Name and contact information, including mailing address, phone numbers and e-mail address
        ii. Qualifications, including license held and number
        iii. If more than one QP was involved, a description of the responsibilities of each

    b. With regard to each firm or corporation involved in managing the soil that is or will be *excess soil*, including excavation, on-site management, on-site processing, hauling and disposing:
        i. Corporate name and business name, contact name and title, and contact information, including mailing address, phone numbers and e-mail address
        ii. A description of their role in managing the soil or *excess soil*
        iii. For any that hold an ECA or that are registered on the Environmental Activity and Sector Registry as required by Part V of the EPA, provide the approval or registration number assigned by MOECC.

5. The section of the ESMP with the heading **Excess soil Sampling Plan Summary and Characterization Summary** shall include the following information:
    a. A statement of whether a RSC has been or is intended to be filed for all or part of the *project area*
    b. From the *Excess soil* Characterization Report, the following:
        i. a listing of PCAs
        ii. a listing of COPCs
        iii. the estimated total volume of *excess soil* expected to be removed from the *project area*, and the estimated volume of *excess soil* to be removed from the *project area* that meets each reuse standard that is applicable to listed *receiving sites* or relevant to on-site management or management at a *TESSS*.

6. The section of the ESMP with the heading **Excess soil Receiving Sites Summary** shall include the following information:
    a. A list of the addresses of each *receiving site* to receive *excess soil* from the *project area*
    b. For each *receiving site*, the volume of *excess soil* to be taken and the quality of *excess soil* to be taken to that *receiving site*
    c. The *excess soil* quality standards applicable to each *receiving site*, which are either the applicable generic table of MOECC *excess soil* standards, or the site specific standards where they have been developed.

7. The section of the ESMP with the heading **Tracking System and Record Keeping Summary** shall include the following information:
    a. A summary of the tracking system described in detail in Appendix 2
    b. A summary of records to be retained or compiled in relation to the tracking system, the location of the records and the name and contact information of a person that can provide these records upon request

8. The section of the ESMP with the heading **Certifications** shall include the following:
    a. Certifications, to be certified by the *proponent*:
        i. That all reasonable inquiries to obtain all information relevant to this ESMP have been made
        ii. That all information described in i have been referred to any QP named in this ESMP
        iii. That to the *proponent*'s knowledge, all statements in the ESMP are true
        iv. That the *proponent* has ensured that access to the entire *project area* has been afforded to the QP and to persons supervised by the QP, for purposes of conducting the Phase One Environmental Site Assessment and if applicable subsequent Excess Soil Characterization.
        v. That they are aware and approve of the contents of the ESMP
        vi. That they have directed a QP to register and implement the plan
        vii. All necessary records are being prepared and retained
    b. Certifications, to be certified by a QP:
        i. That the excess soil management plan has been prepared in accordance with the regulation
        ii. That to the QP's knowledge, all statements in the ESMP are true
        iii. That, if required, a phase one environmental site assessment has been prepared in accordance with the regulation
        iv. An excess soil characterization has been completed in accordance with the regulation or it has been determined that, based on the phase one environmental site assessment and any other information available about past and current uses at the *project area*, there is no requirement for, and it is in the

QP's opinion that, subsequent excess soil characterization is not necessary to determine that the *excess soil* is appropriate for the identified *receiving sites*

v. A tracking system is in place in accordance with the regulation
vi. The quality and quantity of *excess soil* identified for each receiving site identified in the plan is appropriate based upon the regulation, the *receiving sites* property use, the identified use of the *excess soil*, and any other relevant considerations
vii. Based upon the tracking system and any other information of which they are aware, the records in this Plan are accurate as of the last specified date on which they were amended.

9. The section of the ESMP with the heading **Appendix 1: Excess soil Characterization** shall include the following information:
    a. a **Phase One Environmental Site Assessment Report** prepared in accordance with Schedule D of O. Reg. 153/04 except to the extent that sections of that report are unnecessary as a result of a QP's determination to exclude components of the site assessment in accordance with the rules related to the preparation of a phase one site assessment
    b. a **Sampling and Analysis Plan** prepared in accordance with the requirements set out in the *Excess Soil* Reuse Regulation
    c. an **Excess soil Characterization Report** prepared in accordance with the *Excess Soil* Reuse Regulation

10. The section of the ESMP with the heading **Appendix 2: Tracking System Details** shall include the following information:
    a. a detailed description of the tracking system that will be implemented, which satisfies the requirements set out in the section of the Excess Soil Reuse Regulation related to tracking systems

11. The section of the ESMP with the heading **Appendix 3: Excess Soil Receiving Sites and Associated Information** shall include a list of each *receiving site* to receive *excess soil* from the *project area* and for each site the following information:
    a. municipal address or, if irrelevant, legal description of the location of the *receiving site*, and the name of the municipality within which the *receiving site* is located
    b. contact information associated with the *receiving site*, including:
        i. the name of the *receiving site* owner and their contact information for the owner, including telephone number, e-mail address and mailing address
        ii. if different than the *receiving site* owner, the name of a person that is to be contacted in relation to soil management at the *receiving site* and their contact information, including telephone number, e-mail address and mailing address

iii. if a fill management plan has been prepared for the *receiving site*, the name of the person that prepared the fill management plan, the name of the firm or corporation for which they worked at the time the plan was prepared, and contact information, including telephone number, e-mail address and mailing address

c. confirmation whether a municipal site alteration (fill) by-law or permit applies to this site, and confirmation whether any other legal instrument applies to this sites that may contain provisions relevant to the management of soil associated with that site
d. the land use associated with the *receiving site*, and the specific project being undertaken at the *receiving site* for which *excess soil* is required
e. the volume of *excess soil* that the *receiving site* may receive in total for the stated purpose, and the volume of *excess soil* from the *project area* to be taken to that *receiving site*
f. the *excess soil* quality standard applicable to the *receiving site* as determined in accordance with this regulation, including documentation that leachate testing is not required, and documentation justifying site specific standards
g. documented agreement from the *receiving site* owner, or designate, to receive *excess soil* from the *project area*, including,
    i. the agreed upon volume and quality of *excess soil* to be taken to the *receiving site*
    ii. agreed upon measures to be taken if the *excess soil* received is unacceptable to the owner of the *receiving site*
h. consistent with any applicable municipal by-laws or permits, or other legal instruments,
    i. the days and times within which *excess soil* may be received at the *receiving site*
    ii. the routes to each *receiving site* that must be taken by haulers of the *excess soil*
    iii. alternate routes, procedures and/or *receiving sites* in the event the *excess soil* cannot be taken to or received by the specified *receiving site*, including, if necessary, returning the *excess soil* to the *project area*
    iv. the distance in kilometres from the *project area* to the *receiving site* along the specified preferred haul route

12. The section of the ESMP with the heading **Appendix 4: Cumulative Record of Excess Soil Movements** shall include the following information:
    a. Updated within 14 days of the movement of excess soil and every 14 days thereafter, a list of *receiving sites* and *TESSSs* that actually received *excess soil* from the *project area*, and for each *receiving site* and *TESSS*:
        i. the total quantity of *excess soil* moved to that site to date

ii. the quality of *excess soil* moved to that site, described relative to an *excess soil* quality standard
iii. the dates on which soil was hauled to each site
iv. the companies used to haul *excess soil* to each site and the dates each company hauled *excess soil* to that site

13. The section of the ESMP with the heading **Appendix 5: Table of Revision Dates** shall include the following information:
    a. In a table, the following:
        i. A column of dates starting with the date the Plan was first prepared, and then each date the Plan was revised
        ii. For each date, a summary description of the changes made

Schedule B: Phase One Environmental Site Assessment and Excess Soil Characterization

Note: Subject to discussions with the Office of Legislative Counsel as the proposed excess soil reuse regulation is being drafted, the Ministry intends to place the requirements set out in this Schedule in a document to be incorporated by reference in the proposed regulation, as the document may be amended from time to time.

The preparation of an ESMP would begin with a phase one environmental site assessment (ESA) regarding the *project area*, to inform the development of a sampling and analysis plan for the purpose of characterizing the *excess soil* that must be managed. Each of these steps is explained in turn below.

Phase One Environmental Site Assessment

O. Reg. 153/04, and in particular Schedule D to that Regulation, sets out detailed requirements for a phase one ESA that must be carried out for a property for which a RSC is to be filed. Although the phase one ESA for an ESMP is required to have the same general components as the phase one ESA prescribed by O. Reg. 153/04, the scope of the general objectives is somewhat narrower for the components of a phase one ESA for an ESMP, which is consistent with its more limited purpose (i.e. to determine the likelihood that areas within the *project area* where soil is to be excavated may have been adversely affected by contaminants and for which contaminants the soil should be tested).

The proposed regulation would give the QP the option of not adhering to phase one ESA requirements set out in Schedule D of O. Reg. 153/04, as long as the general and specific objectives that are prescribed for the ESA are met. The QP would be required to identify the requirements from Schedule D that were not followed as part of the phase one ESA and set out the rationale for not complying with the requirement and how any information gaps will be addressed.

> **A phase one environmental site assessment must be carried out by or under the supervision of a QP and shall inform the preparation of the *excess soil* characterization.**
>
> **A phase one environmental site assessment in respect of a *project area* is not required to be carried out as part of the preparation of a soil management plan if less than one thousand cubic metres of *excess soil* will be removed from the *project area*.**
>
> **The general objectives of a phase one environmental site assessment that must be met are the following:**

i. **To develop a preliminary determination of the likelihood that one or more contaminants have affected soil on, in or under any areas of the *project area* that are to be excavated.**
ii. **To identify any *areas of potential environmental concern* within the *project area* and to determine if any areas where excavations will occur within the *project area* could have been affected by an *area of potential environmental concern*.**
iii. **To identify the *contaminants of potential concern* (*COPCs*) that should be the focus of the sampling and analysis plan component of the *excess soil* characterization.**

A phase one environmental site assessment must include the following components:

i. **A records review**
ii. **Interviews**
iii. **Site Reconnaissance**
iv. **An evaluation of information gathered from the records review, interviews and site reconnaissance**
v. **A phase one environmental site assessment report.**

The phase one environmental site assessment report must include conclusions made by the QP, based on a review of the available information collected during the phase one environmental site assessment and on the exercise of professional judgement, on,

(a) the existence and location of any areas of potential environmental concern within the *project area* that could result in the presence of contaminants in soil that is to be excavated within the *project area*,
(b) the current and past uses of the *project area*,
(c) the likelihood that one or more contaminants have affected the soil that is to be excavated within the *project area*, and
(d) the *COPCs* that shall be the focus of the sampling and analysis plan.

The phase one environmental site assessment report must include a phase one conceptual site model. The model must include one or more figures of the *phase one study area* that,

(a) show any existing *buildings* and structures,
(b) show roads, including names, within the *phase one study area*,
(c) show uses or properties adjacent to the phase one property (where the examination of the *phase one study area* is necessary),
(d) identify and locate areas where any PCA has occurred and show tanks in such areas, and
(e) identify and locate any areas of potential environmental concern that could result in the presence of contaminants in soil that is to be excavated within the *project area*.

The model must also provide a written description and assessment of,

- **(a) every area where potentially contaminating activities on, or potentially affecting, any part of the *project area* where soil is to be excavated.**
- **(b) any *COPCs*,**
- **(c) the potential for underground utilities, if present, to affect contaminant distribution and transport,**
- **(d) available regional or site specific geological information, and**
- **(e) how any uncertainty or absence of information obtained in each of the components of the phase one site assessment could affect the validity of the model.**

The phase one environmental site assessment report must also include a table prepared by the QP that sets out,

- **(a) every *area of potential environmental concern* within the *project area* that could result in the presence of contaminants in the soil to be excavated, and**
- **(b) current and past activities that have been undertaken within the *project area*, to the extent past activities have been investigated as part of the phase one environmental site assessment.**

The following are the specific objectives of a records review:

- **(a) To obtain and review records that relate to current and past uses of and activities within the *project area* and the *phase one study area* (where the examination of a *phase one study area* is necessary) in order to determine if an *area of potential environmental concern* exists that could have affected soils that are to be excavated within the *project area*.**

The following are the specific objectives of conducting the phase one environmental site assessment interviews:

- **(a) To obtain information to assist in determining if an *area of potential environmental concern* exists that could result in the presence of contaminants in soils that are to be excavated within the *project area*.**
- **(b) To identify details of potentially contaminating activities or potential contaminant pathways that could result in the presence of contaminants in soils that are to be excavated within the *project area*.**

The following are the specific objectives of the site reconnaissance component of a phase one environmental site assessment:

- **(a) To determine if any areas of potential environmental concern exist within the *project area* or the *phase one study area* (where the examination of a *phase one study area* is necessary) that could result in the presence of contaminants in soils that are to be excavated within the *project area* through observations about current conditions and current and past uses and potentially contaminating activities.**

(b) To identify details of,

1. **Potential contaminant pathways that could result in the presence of contaminants in soils to be excavated within the *project area*,**
2. **Every *area of potential environmental concern* that could affect soils that are to be excavated within the *project area*, and**
3. **In respect of each *area of potential environmental concern*, the *COPCs*.**

A phase one environmental site assessment must comply with the requirements of each component of a phase one environmental site assessment set out in Schedule D to Ontario Regulation 153/04 (including the requirement to investigate the *phase one study area* as part of the phase one ESA) unless the QP is of the opinion that,

(a) It is not necessary to comply with the requirement to in order meet the general and specific objectives of the phase one ESA; or

(b) Having regard to the nature of the project and the geographic size of the *project area*, it is not practicable to comply with the requirement.

Where a QP forms an opinion mentioned in subsection (1) that compliance with a requirement in Schedule D to O. Reg. 153/04 is not required, the QP shall, in the phase one environmental site assessment report,

(a) Identify every requirement in Schedule D that was not complied with when carrying out the phase one environmental site assessment,

(b) Describe the rationale for his or her opinion,

(c) Identify and describe any information gaps in the phase one environmental site assessment report as a result of the non-compliance, and

(d) Describe how the information gaps shall be addressed in the preparation of the sampling and analysis plan component of the *excess soil* characterization in order to ensure that the general objectives of the *excess soil* characterization can be satisfied.

If a RSC is to be filed for the *project area*, the requirements of O. Reg. 153/04 in relation to the phase one environmental site assessment must be complied with and the phase one environmental site assessment may be relied upon as the phase one for the purposes of the ESMP.

Other provisions of O. Reg. 153/04 relating to Phase One ESAs to be incorporated with necessary modification including sections 26 (Responsibility of Qualified Person, General), section 27 (Responsibility of Qualified Person, Impediments), section 28 (Requirement that Phase One Site Assessment Report Be Based on Current Work), section 29 (Responsibility of Qualified Person Re Reports and Data), section 30 (Responsibility of Newly Retained Qualified Person).

Archaeological Sites: If, while undertaking the records review, interviews or site reconnaissance as part of the conduct of the phase one environmental site assessment, or at any other time, the QP becomes aware that part of the project where excavations are planned may disturb an *archeological site*, the QP shall notify the *proponent* and determine if an archeological assessment is necessary before excavations take place to ensure that no contravention of section 48 of the Ontario Heritage Act will occur as a result of any excavations within the *project area*.

The Ministry of Tourism, Culture and Sport has prepared screening tools (questionnaires) that provide criteria for the non-specialist for the purposes of determining:

- If a property or project area may contain archaeological resources i.e., have archaeological potential (http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/GetFileAttach/021-0478E~3/$File/0478E.pdf)
- If a property or project area: is a recognized heritage property, or may be of cultural heritage value: (http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/GetFileAttach/021-0500E~1/$File/0500E.pdf)
- In relation to Indigenous communities, QPs and archaeologists who may be hired to support them are also strongly encouraged to consider the input in the draft technical bulletin from the Ministry of Tourism, Culture and Sport (2011) entitled *Engaging Aboriginal Communities in Archaeology* (http://www.mtc.gov.on.ca/en/publications/AbEngageBulletin.pdf)

If after completion of a Phase One Environmental Site Assessment and associated evaluation, rationale and certification by a QP, it is determined that intrusive sampling is not required to sample and analyze the quality of the excess soil to be removed from any part of the project area, excess soil characterization as outlined in Schedule B would not be required, subject to the proposed requirements described below (as part of the "excess soil characterization") where intrusive sampling is mandated for (1) areas of a project area that have been used for an industrial use or for specified commercial uses (such as a garage, gasoline outlet, operation of dry cleaning equipment) or where during excavations evidence of contamination is discovered. .

Excess Soil Characterization

If the Phase One Environmental Site Assessment verifies a likelihood that areas within the project area where soil is to be excavated may have been adversely affected by contaminants and for which the concentration of contaminants in such soil should be tested, an *excess soil* characterization would be required, as described below. Key components of an *excess soil* characterization are preparing a sampling and analysis plan implementing the sampling and analysis plan, and a review and evaluation of information and the preparation of an excess soil characterization report.

An "*excess soil* characterization" that requires the characterization of the soil to be excavated from within the *project area* must be carried out by or under the supervision of a QP and shall inform the preparation of an *excess soil* characterization report.

The general objectives of the *excess soil* characterization are the following:

- **(a) To assess every area of the *project area* where soil excavations are planned.**
- **(b) Based on the findings of the phase one environmental site assessment and the phase one conceptual site model, to identify the areas of the *project area* where the soils to be excavated must be subject to intrusive sampling.**
- **(c) To ensure appropriate sampling and analysis of soils to be excavated within the *project area* is undertaken to make determinations in relation to,**
  - **i. excavated soil that may be reused within the *project area*,**
  - **ii. excavated soil that is *excess soil* and requires disposal at a location outside of the *project area*, and**
  - **iii. options for treating or disposing of *excess soil*.**
- **(d) To ensure that the quality of any soil excavated within the *project area* is capable of being known and documented, using the *Excess soil* Tracking System mentioned above, from the time soil is excavated within the *project area* to the time that soil reused within the *project area* or, in respect of any *excess soil*, to the time it is deposited at a *receiving site*.**

An *excess soil* characterization shall include the following components:

- **(a) Preparing a sampling and analysis plan**
- **(b) Implementing the sampling and analysis plan**
- **(c) A review and evaluation of information and the preparation of an *excess soil* characterization report.**

Sampling and Analysis Plan

The following are the specific objectives of a sampling and analysis plan:

- **(a) Based on the findings of the phase one environmental site assessment and the phase one conceptual site model and the areas where excavations are planned within the *project area*,**
  - **i. to identify those areas of the *project area* that must be investigated using intrusive sampling, and,**
  - **ii. to identify all other areas of the *project area* where excavations are planned and that will not be subject to intrusive sampling and to provide a rationale explaining why such areas of the *project area* are not required to be subject to intrusive sampling to make determinations on how the excavated soil from those areas shall be managed and disposed of.**

(b) For the areas of the *project area* subject to intrusive sampling referred to in paragraph 1, determine the location, concentration and distribution of contaminants in the *soil* to be excavated within those areas.

(c) To determine whether intrusive sampling of soil that is placed in stockpiles after excavation is necessary, having regard to any impediments to in situ sampling and the manner in which the soil is handled, stored or transported prior to it being deposited at a *receiving site*, including any period the *excess soil* is stored at a *TESSS*.

(d) To develop a quality assurance program that is designed to effectively limit errors and bias in sampling and analysis through the implementation of assessment and control measures that will ensure data are useful, appropriate and accurate in the determination of whether *excess soil* to be removed from the *project area* is suitable for deposition at a *receiving site* identified in the ESMP.

When preparing the sampling and analysis plan the QP will be required to ensure the requirements set out in section 3 of Schedule E to Ontario Regulation 153/04 are satisfied (excluding any requirements related to groundwater). The requirements in section 3 relate to,

(a) how sampling locations, depths and parameters for analysis are to be chosen based on the findings of the phase one environmental site assessment, and,

(b) that the plan include,

- **i. a quality assurance and quality control program,**
- **ii. data quality objectives,**
- **iii. standard operating methods for field investigations used in soil sampling, and**
- **iv. a description of any physical impediments that interfere with or limit the ability to conduct sampling and analysis.**

If the excavated soil is to be stored in stockpiles within the *project area* or at another location including a *TESSS*, the sampling and analysis plan must include measures to ensure that the soil is appropriately characterized to determine if any contaminants have been introduced to the soil since its excavation, as a result of handling, transporting, storing or other management of the soil.

Where any person involved in the excavation of soil within the *project area* discovers evidence of the presence of a contaminant in the soil as a result of visual or olfactory observation, the plan must include contingency measures on how to respond to the incident including measures that comply with the requirements of this regulation in relation such incidents.

The QP, in preparing the sampling and analysis plan, must ensure that the following minimum sampling requirements are satisfied:

(a) Where a phase one environmental site assessment has found that there is one or more areas of potential environmental concern within the *project area* that could

result in the presence of contaminants in an area where soil excavation is planned, the sampling and analysis plan must, at a minimum, provide for the following for each of those areas of excavation:

i. **For an area of excavation that ranges in size between 500 m^2 and 10,000 m^2 in area, a minimum of 3 to 10 sample locations would be required in accordance with the Table below.**
ii. **Where there is information regarding the location of potential sources of contaminants within an APEC (e.g., former tank), sample locations must be identified with the objective of locating the maximum concentration.**
iii. **The sampling program shall be designed to adequately delineate the areas of highest contaminant concentrations so that such excavated soils can be appropriately segregated and sent to the appropriate *receiving site* (including for treatment).**
iv. **As the depth of the excavation increases, additional soil samples must be collected at appropriate depth intervals at the same sampling location. The sampling depth intervals should be based on the *COPCs*, nature of the contaminant, contaminant pathways and the geology.**
v. **For every 5 metres of soil excavated below 1.5 metres, 1 additional sample is required from each sampling location unless the QP can provide a rationale for why sampling at depth is not necessary. For example, if the APEC is less than 500 m^2 and the planned excavation depth is 6 metres, the minimum number of sampling locations (e.g., borehole locations) is 3, and the minimum number of soil samples for laboratory analysis is 6; however, the QP would be permitted to only take three samples and not take samples below the 1.5 m if the QP is of the opinion that it is not necessary in order to meet the general and specific objectives of the *excess soil* characterization.**
vi. **Where a sampling and analysis plan only provides for these minimum sampling requirements, a rationale must be included explaining why additional sampling was not necessary to appropriately characterize the soil to be excavated within the *project area*.**

Sample Sizes and Frequency Stratified by Area of Excavation and Depth for *in-situ* Sampling

Area of Excavation (m^2)	Number of Boreholes	Number of Samples per Depth Interval	Cumulative Samples per Sampling Depth Interval				
			0 – 1.5 m bgs	1.5 – 6 m bgs	6 -11 m bgs	11 - 16 m bgs	16 - 21 m bgs
<500	3	3	3	6	9	12	15
500 - 750	4	4	4	8	12	16	20
750 - 1000	5	5	5	10	15	20	25
1000 - 2000	6	6	6	12	18	24	30
2000 - 3500	7	7	7	14	21	28	35

3500 - 5000	8	8	8	16	24	32	40
5000 - 7500	9	9	9	18	27	36	45
7500 - 10000	10	10	10	20	30	40	50
ha^{-1}	10	10	10	20	30	40	50

Notes:
m^2 - square metres
m bgs - metres below ground surface
ha^{-1} - per hectare

In addition to the minimum sampling that a sampling and analysis plan must provide for, if any land that is within the *project area* where excavations are planned is used or has been used for an "industrial use" (as defined in Ontario Regulation 153/04), a garage, a bulk liquid dispensing facility, including a gasoline outlet, or for the operation of dry cleaning equipment, the sampling and analysis plan in relation to those lands within the *project area* must provide the following:

- **(a) If planned area of excavation within those lands is less than 500 m^2, a minimum of 3 sample locations is required (e.g., 3 boreholes, 3 test pit locations or 3 hand auger locations), resulting in the submission of a minimum of 3 samples to an accredited lab.**
- **(b) The QP must determine the appropriate number of samples to collect at each location (i.e., at different depths), and this determination should be based on the depth of soil to be excavated and the geology of those lands.**

In relation to any soil excavated from the *project area* that is stored in stockpiles, the sampling and analysis plan must provide for the following:

- **(a) Composite sampling would be the preferred method of sampling stockpiles (except for volatiles)**
- **(b) Samples should be collected at different depths to characterize the depth profile and the spatial variation laterally of the substances of concern within the stockpile.**
- **(c) Soil samples should not be obtained from the surface of the stockpile; rather techniques and equipment need to allow for collection of samples from the entire stockpile, including the core.**
- **(d) Minimum sample frequency for stockpiles would be based on the volume of soil in the pile (see Table below). As the volume of the pile increases, the number of sampling locations would increase. For example:**
  - **i. If the volume of the soil is less than 150 m^3, a minimum of 3 sampling locations would be required**
  - **ii. If the volume of soil in the stockpile is 550 to 670 m^3, a minimum of 8 sampling locations would be required**
  - **iii. If the volume of soil in the stockpile is 1,550 to 1,700 m^3, a minimum of 15 sampling locations would be required**

(e) No set minimums on the number of samples through the depth profile; however, as the thickness of the stockpile increases, the number of samples would be expected to increase; at the discretion of the QP with rationale

Sampling Stockpiles

Sample Sizes Based on Stockpile Soil Volume

Volume (m^3)	Number of Samples	Volume (m^3)	Number of Samples
<130	3	2050 – 2200	18
130 – 220	4	2200 – 2350	19
220 – 320	5	2350 – 2500	20
320 – 430	6	2500 – 2700	21
430 – 550	7	2700 – 2900	22
550 – 670	8	2900 – 3100	23
670 – 800	9	3100 – 3300	24
800 – 950	10	3300 – 3500	25
950 – 1100	11	3500 – 3700	26
1100 – 1250	12	3700 – 3900	27
1250 – 1400	13	3900 – 4100	28
1400 – 1550	14	4100 – 4300	29
1550 – 1700	15	4300 – 4500	30
1700 – 1850	16	4500 – 4700	31
1850 – 2050	17	4700 – 5000	32
		>5000	32 + (volume – 5000) / 300

Quality assurance/quality control samples are recommended and should include a minimum of 1 duplicate sample for every 10 samples, one or more field blanks to verify that the equipment is clean, and trip blank samples where considered appropriate.

Minimum Parameter List

At a minimum, soil samples are required to be analyzed for petroleum hydrocarbons, metals and inorganics.

In addition to the minimum parameter list, the following parameters are also required to be analyzed:

a) Any COPCs identified during the phase one environmental site assessment.

b) Soil samples excavated from a stormwater management pond will also be required to undertake *excess soil* stockpile sampling, following the soil being dewatered, including analysis of polycyclic aromatic hydrocarbons (PAHs).

c) Leachate analysis for certain contaminants as outlined in Schedule C.

If *excess soil* is being taken to a *receiving site* that is governed by a *site specific instrument or by-law*, any additional sampling requirements to satisfy the provisions of that *site specific instrument or by-law* should also be considered.

Implementation of the Sampling and Analysis Plan

The following is the specific objective of the work necessary to implement the sampling and analysis plan:

(a) To determine whether contaminants are present in the areas of the *project area* where intrusive sampling has been undertaken, and, if so, identify, in the soils to be excavated, the contaminants, their concentrations and distribution.

The QP must ensure that the following requirements are met when implementing the sampling and analysis plan:

(a) Soil samples for characterization shall be collected from undisturbed soils on, in or under the areas of the *project area* where intrusive sampling is to be carried out, and not from soil which has been excavated, unless *there is an impediment to gaining access to that part of the project area to collect samples from undisturbed soils* in which case soil samples shall be collected from the stockpile where the soil is temporarily stored.

(b) Having regard to the findings of the phase one environmental site assessment and the intended depths of the areas of excavation, a sufficient number of soil samples are collected from representative depths and locations which will be adequate to allow the concentrations of any contaminants in the soil that is to be excavated to be known.

(c) Soil samples shall be collected using professionally acceptable soil collection methods and shall be taken by or under the supervision of the QP.

(d) Precautions shall be taken to minimize the potential for cross-contamination.

(e) Where soil is to be stored in stockpiles, excavated soil from areas of the *project area* that is not subject to intrusive sampling must be stored in stockpiles that are segregated from soil that is excavated from areas of the *project area* that is subject to intrusive sampling. If soil excavated from areas of the *project area* that is not subject to intrusive sampling is mixed in a stockpile with other excavated soil from the *project area*, the stockpile is required to be sampled in accordance with the stockpile sampling requirements. The plan must also ensure that stockpiles of soils that

originate from areas of the *project area* that is not subject to intrusive sampling and those stockpiles that contain soils from the other areas of the *project area* are clearly identified and tracked and a system is established to keep them segregated.

(f) Requirements set out in the following provisions of Schedule E to Ontario Regulation:

- **i. Section 18 (soil sampling and analysis)**
- **ii. Section 19 (sediment samples)**
- **iii. Section 20 (contaminant not listed)**
- **iv. Section 21 (selecting soil samples for analysis)**
- **v. Section 24 (finalized field logs)**
- **vi. Section 26 (sediment sampling, finalized field logs)**
- **vii. Section 33 (Analysis of soil)**
- **viii. Section 35 (Segregation of stockpiles based on contaminants and concentrations - in relation to those stockpiles of soil that originate from areas of the *project area* that is subject to intrusive sampling)**
- **ix. Section 36 (sampling and analysis of soils in stockpiles – however the stockpile sampling frequency shall be the Table of stockpile sampling set out above)**
- **x. Section 38 (free flowing product).**

If any person responsible for the excavation of soil within a *project area* becomes aware that the soil could be affected by the presence of a contaminant in the soil as a result of visual or olfactory observations, including the following indicators:

- **drums and containers;**
- **stained or discoloured earth in contrast with adjoining soil;**
- **fill material containing debris;**
- **trash/garbage or waste;**
- **suspected odours that emanate when the earth is disturbed;**
- **oily residue intermixed with earth;**
- **sheens, films or discolorations on groundwater;**
- **cinders/ash or other combustion by-products, like ash,**

The following actions must be taken:

(a) soil excavations in that area of the *project area* must be halted immediately,

(b) the QP must be notified,

(c) the QP must provide direction on how to respond to the incident, including,

- **i. whether additional sampling and analysis is required to characterize soil that is to be excavated,**
- **ii. what practices must be followed in relation to the segregation and containment of the soil to be excavated to prevent contaminants from moving to other soil,**
- **iii. when the incident has been resolved and excavation of soil within that area of the *project area* may resume,**

(d) the QP must describe, in a report, the incident and any action taken to respond to the incident including any further sampling and analysis of soil and the report shall be appended to the soil characterization report.

Excess Soil Characterization Report

The QP shall review, interpret and evaluate the information used in preparing and implementing the ESMP and shall prepare an *excess soil* characterization report.

The soil characterization report shall include the following:

(a) Cross-sections, figures, tables and narrative descriptions that illustrate the following,

- **i. every area where excavations are planned within the *project area*, and the dimensions of each area,**
- **ii. every *area of potential environmental concern* within the *project area*,**
- **iii. the parts of the *project area* that are subject to intrusive sampling,**
- **iv. every *area of potential environmental concern* within the *project area* that could result in the presence of a contaminant in soil that is to be excavated and for each area, the *PCA* related to that *APEC*,**
- **v. investigation methods including drilling and excavating test pits, soil sampling, field screening methods and analytical testing, as described in section 5 of the Table to Schedule E of Ontario Regulation 153/04 (contents of the phase two environmental assessment report – excluding any contents related to groundwater),**
- **vi. sampling locations (i.e. boreholes and test pits) and sampling depth interval and a rationale for the selection of sampling locations,**
- **vii. for every area of excavation where soil samples were collected,**
  - **a. the parameters for analysis, including a rationale for the choice of parameters,**
  - **b. the distribution of each contaminant,**
  - **c. the date of sample collection,**
  - **d. the date of analysis**
- **viii. if soil could not be sampled in situ or in the case of *infrastructure project*s where stockpile sampling is more practical, for each stockpile**
  - **a. the location and volume of the stockpile,**
  - **b. the area within the *project area* that the soil in the stockpile originated from,**
  - **c. the location and number of samples collected from the stockpile and rationale for the selection of sampling locations,**
  - **d. the parameters for analysis, including a rationale for the choice of parameters,**

e. **the distribution of contaminants within each stockpile,**
f. **the date of sample collection,**
g. **date of analysis,**

ix. **laboratory certificates of analysis of samples collected**
x. **stratigraphy from ground surface to the depth of the deepest planned excavation within the *project area***
xi. **approximate depth to water table, including whether the depths of excavation for each area where soil excavation is planned are below the water table,**
xii. **despite the findings of the phase one environmental site assessment, if the QP determines that it is not necessary to achieve the general objectives of the *excess soil* characterization to analyze for a parameter group (as identified in the MOECC's Analytical Protocol) to which a contaminant related to a *PCA* belongs, the rationale for the determination,**
xiii. **quality assurance and quality control results (see section 6 ix in the Table to Schedule E to Ontario Regulation 153/04)**

Where a sample of soil is taken as part of the characterization of *excess soil*, the requirements of section 47 of Ontario Regulation 153/04 (Analytical procedures) shall be complied with, including the requirements in relation to the handling and storage of the samples and the requirements to comply with the MOECC's Analytical Protocol ("Protocol for Analytical Methods Used in the Assessment of Properties under Part XV.1 of the Environmental Protection Act.").

Schedule C: Reuse of Excess Soil At Receiving Sites

Note: The contents of this schedule are proposed to be placed in a document, to be titled *Reuse of Excess Soil At Receiving Sites.* Subject to discussions with the Office of Legislative Counsel during the development of the proposed regulations governing excess soil, it is the Ministry's intention to adopt this document by reference in the proposed regulations as the document may be amended from time to time.

Where a *receiving site* is not governed by a *site specific instrument or by-law*, subject to certain exceptions, the *excess soil* deposited at the *receiving site* must comply with the requirements set out in the proposed *Reuse of Excess Soil At Receiving Sites*. This document will contain tables of excess soil reuse standards and rules on how the tables of standards are to be applied to a receiving site, including any additional rules which must be followed when applying those standards to a receiving site. The document is also intended to assist those public bodies responsible for administering a *site-specific instrument or by-law* in developing appropriate soil reuse standards for *receiving sites* and to determine whether any further restrictions should be imposed on the deposition of soil at the *receiving site*. Further, as an alternative to using the published tables of reuse standards, this document will also enable the use of a Site Specific Beneficial Reuse Assessment Tool and other local risk assessment approaches to derive site specific standards, as outlined below.

This document also specifies new rules for determining when *excess soil* meets applicable standards for Table 1 under the Ministry's *Soil, Ground Water and Sediment Standards*, which is intended to be more flexible than that currently associated with O. Reg. 153/04, by accounting for natural variability that exists in soil and to account for sample homogeneity and laboratory method precision, thereby providing a better representation of the soil quality.

Excess Soil Reuse Standards

Similar to the Ministry's *Soil, Ground Water and Sediment Standards*, generic excess soil reuse standards have been developed according to land use and ground water potability. However, a further consideration when determining which *excess soil* quality standards apply to a *receiving site* is the total volume of *excess soil* that is deposited at the *receiving site*. Because the total amount of *excess soil* received at *receiving sites* may often be greater than the amount of soil potentially affected by contaminants assumed to be present at a typical brownfield site, this can affect the potential risk associated with the total amount of contaminants that may be present in the *excess soil* to be deposited at the *receiving site*. Recognizing that large volumes of *excess soil* may be deposited at the *receiving site*, generic *excess soil* reuse standards which consider large volume deposits were derived. In order to use the generic *excess soil* standards tables, in addition to the land use and groundwater condition, the total volume of *excess soil* to be deposited at a *receiving site* must also be known to determine the appropriate reuse standards to apply to that *receiving site.* There are also special rules outlined below

which must be adhered to and stipulations where a QP may be required when determining which reuse standards to apply to a *receiving site*. Further details and rationale on the derivation of the proposed *excess soil* reuse standards can be found in the document *Rationale for Reuse of Excess Soil At Receiving Sites.*

Included below are Tables A through D outlining *excess soil* standards for three land use types: agricultural and other, residential/parkland/institutional and industrial/commercial/community. Non-potable site condition standards were derived for two of these land use types - residential/parkland/institutional and industrial/commercial/community. Agricultural land is always assumed to be in a potable groundwater condition. Tables E and F outline leachate standards required for potable and non-potable ground water conditions to be applied in certain circumstances.

These proposed standards represent a first phase of standards development. It is intended that additional sets of reuse standards will be added over time to provide further flexibility for *excess soil* reuse (e.g. soil at depth, situations where there are no buildings). MOECC is also continuing to work closely with MNRF to ensure the alignment of *excess soil* and fill policies for pits and quarries regulated under the *Aggregate Resources Act*.

The generic reuse standards provided in this document can be applied if the following criteria and those in the next section entitled Special Rules When Applying Generic Excess Soil Reuse Standards are satisfied,

a) **If the concentration of the contaminants in the *excess soil* does not exceed those specified in Table 1 under the Ministry's *Soil, Ground Water and Sediment Standards*, the *excess soil* may be reused at a *receiving site* with any type of use.**
    i. **Where the excess soil originates from an APEC, before the soil is deposited at a *receiving site*, even if the soil meets Table 1 reuse standards, the "special rules" section regarding Soil Originating from an APEC as outlined below must be complied with.**

b) **In relation to a table other than Table 1 under the Ministry's *Soil, Ground Water and Sediment Standards*, the concentration of the contaminants in the *excess soil* does not exceed those specified in the applicable table and the applicable table is based upon:**
    i. **The type of property use associated with the *receiving site* at which the *excess soil* will be used,**
    ii. **The total volume of *excess soil* being used at the *receiving site*, including *excess soil* received from multiple *project areas*, and**
    iii. **Whether non-potable site condition standards may be applied to the *receiving site* based upon the rules set out below.**
c) **The standards applicable in relation to the total volume of *excess soil* being used at the *receiving site*, are the following:**

i. **For volumes of *excess soil* up to 350 m^3, the Ministry's *Soil, Ground Water and Sediment Standards* (Tables 2-9), link: https://dr6j45jk9xcmk.cloudfront.net/documents/998/3-6-3-sediment-standards-en.pdf**
ii. **For volumes of *excess soil* up to 5000 m^3, the Medium Volume tables will be used (see Table A and Table B below).**
iii. **For volumes of *excess soil* greater than 5000m^3, the Volume Independent tables will be used (see Table C and Table D below).**
iv. **Despite i above, the Ministry's *Soil, Ground Water and Sediment Standards* may be used to a maximum of 1000m^3 if a QP for the receiving site has determined based upon an assessment of the potential contaminant receivers and contaminant pathways, the distribution and thickness of the *excess soil* at the property, and the specific use of the *excess soil* at the *receiving site*, that this volume of soil at that standard would not result in an increase in risk relative to the risk upon which the standards were developed as described in the rationale document.**

d) **When determining whether non-potable *excess soil* standards may be used in relation to a particular *receiving site*, those standards may only be applied in the circumstances set out subsection 35 (1) of O. Reg. 153/04 (modified as necessary to apply to a *receiving site* rather than to the filing of a RSC).**
e) **The concentration of contaminants in leachate will not exceed that specified in the Leachate Tables E and F found below, if leachate analysis is required as specified below in the section Soil Originating from an APEC.**

Special Rules When Applying Excess Soil Reuse Standards

The following apply in relation to the application of the standards above.

Environmentally Sensitive Areas

a) ***Excess soil* may only be used within an *environmentally sensitive area* if the following criteria are met:**
   i. **The *excess soil* meets Table 1 under the Ministry's Soil, Ground Water and Sediment Standards, and**
   ii. **If the area from which the *excess soil* originated was an APEC the requirements outlined below regarding Soil Originating from an APEC are met**

Salt Impacted *Excess soil*

a) ***Excess soil*** **that is or may be elevated in parameters (e.g. Sodium Absorption Radio/Electrical Conductivity) that are typically associated with their application for road and sidewalk safety under conditions of snow or ice, may be reused in the following locations,**

i. **A location where it is reasonable to expect that the *soils* at that location are or will be affected by the same parameters as a result of application for road and sidewalk safety under conditions of snow or ice,**
ii. **In industrial and commercial areas,**
iii. **Despite the above, not in a location:**
    1. **Within 120m of a waterbody,**
    2. **Within 100m from a water well, or**
    3. **On agricultural lands being used for or planned to be used for growing crops and pasturing livestock.**

Agricultural Lands

a) **The portion of agricultural land being used for, or planned to be used for, growing crops or pasturing livestock, will only be used as a *receiving site* for *excess soil* if the following criteria are met:**

i. **No *excess soil* will be placed on top of existing *topsoil*, unless the *soil* is *topsoil*, and**
ii. **One of the following apply:**
    1. **The excess soil meets Table 1 under the Ministry's Soil, Ground Water and Sediment Standards and, if the area from which the excess soil originated was an APEC, the requirements outlined below regarding Soil Originating from an APEC are met, or**
    2. **The excess soil is from a project area that is an agricultural property with no *PCA*s.**

Please note that the Ministry of Agriculture, Food and Rural Affairs (MNRF) has released a fact sheet for farmers who may be receiving soil onto their properties, which is available at: http://www.omafra.gov.on.ca/english/engineer/facts/16-055.htm

Local Background Concentrations

a) **An *excess soil* quality standard is deemed not to have been exceeded if a QP demonstrates, with evidence, that the standard is exceeded in the *excess soil* due to naturally occurring conditions found within the municipality/unorganized territory or an adjacent municipality/unorganized territory.**

b) The demonstration is documented, a copy of that documentation is provided to the receiving site owner, and a copy of the document is retained by the receiving site owner and the QP; a copy will be provided to the Ministry upon request.

Soil Originating from an APEC

a) *Excess soil* which originates from an *APEC* that is associated with a contaminant of potential concern as determined by the QP and which are listed in the leachate Tables E and F below, will also be required to meet the leachate standards associated with the contaminant(s) of potential concern, with the exception that *excess soil* meeting Table 1 under the Ministry's Soil, Ground Water and Sediment Standards does not require leachate testing for metals.

b) As an alternative to (a) above, leachate testing is not required if both of the following apply:

- **i. a QP has determined that any of the *COPCs* will not reach either a water body or drinking water well, including a planned well, at concentrations above the applicable leachate standard as a result of applying proximity setbacks from any water body or drinking water well,**
- **ii. if the receiving site is in a potable groundwater condition, the *COPCs* will not reach the property boundary above the applicable leachate standard as a result of applying a setback, and**
- **iii. The determination by a QP is documented and a copy of the documentation is provided to the *receiving site* owner.**

Table 1 Attainment Requirements

Unlike the current existing compliance requirement from O. Reg. 153/04 in which every soil sample must be numerically equal to or lower than Table 1 under the Ministry's *Soil, Ground Water and Sediment Standards*, in order for the soil to be considered Table 1 quality, a new attainment requirement is proposed to account for the natural variability that exists in soil and to account for sample homogeneity and laboratory method precision, thereby providing a better representation of the soil quality. The following attainment requirements are proposed for Table 1 *excess soil*, MOECC is currently exploring application of similar attainment requirements for other excess soil reuse tables.

a) When a determination is being made on whether *excess soil* satisfies Table 1 under the Ministry's *Soil, Ground Water and Sediment Standards*, the following attainment requirements are that,

i. **The 90th percentile of the data set (90% of the samples) is less than the Table 1 standard,**
ii. **No single sample within the data set exceeds the applicable ceiling value as documented below, and**
iii. **The Upper 95th% upper confidence limit of the mean (UCLM) concentration of the samples must be less than the Table 1 standard.**

b) **A minimum of twenty (20) soil samples is required. If the sample set contains less than 20 samples, single point compliance continues to be an option (i.e., no single sample result numerically higher than Table 1 standard).**
c) **Ceiling values remain the same as Table 1 standards when:**
    i. **Ontario Typical Range (OTRs) were not developed (Table 1 set at analytical reporting limit (RL)), or**
    ii. **OTR is set at the RL as the OTR samples were undetected or detected at levels being less than RLs.**
    iii. **Where neither i or ii above apply, a ceiling value may be generated based on the Table 1 value multiplied by a factor of 2.**
    iv. **Ceiling values are not permitted to exceed an upper risk threshold.**

Site Specific Beneficial Reuse Assessment Tool (SSBRAT)

MOECC is currently developing a Site Specific Beneficial Reuse Assessment Tool (SSBRAT). This tool would be similar to the Modified Generic Risk Assessment approach utilized under O. Reg. 153/04 – one of the alternative risk assessment procedures set out in that Schedule (as provided in subsection 7 (3) of Schedule C to O.Reg 153/04). This tool would permit the development of site specific *excess soil* reuse standards for a *receiving site* as an alternative option to using the generic *excess soil* reuse standards by taking into account more site specific land use characteristics. Like the Modified Generic Risk Assessment approach, the SSBRAT would rely on the approved model that was used to develop the Ministry's *excess soil* reuse standards and would only be used where standardized risk management measures can be implemented at the *receiving site*. It is proposed that a QP may use this SSBRAT to generate site specific *excess soil* reuse standards for a *receiving site*. The use of this tool would not require oversight or approval by a public body, however, there would be a requirement to document results and to provide this documentation to the *receiving site* owner and the QP to retain such documents. The MOECC will work with industry experts in developing the SSBRAT. Once the SSBRAT has been developed, the Ministry intends to post a description of the tool on the Environmental Registry for feedback.

The following would apply to use of the Site Specific Beneficial Reuse Assessment Tool:

a) **The SSBRAT may only be used by a QP with expertise in risk assessment,**

b) The QP certifies to the owner of the *receiving site* that the site specific *excess soil* quality standards have been developed using the SSBRAT and used in accordance with any rules and limitations that are specified by the Ministry, and

c) The results of the application of the SSBRAT are documented and a copy of that documentation is provided to the *receiving site* owner and a copy of the document is retained by the *receiving site* owner and the QP, and a copy will be provided to the Ministry upon request.

Other Site Specific Standards Assessments

In addition to the Site Specific Beneficial Reuse Assessment Tool mentioned above, other risk assessments approaches may be used to develop *excess soil* quality standards for a *receiving site*, such as a community based risk assessment identified under subsection 7 (2) of Schedule C to O.Reg 153/04. Utilizing a risk assessment approach, other than the SSBRAT, for the development of site specific *excess soil* reuse standards for a *receiving site* would only be permitted with the deposit of *excess soil* at a *receiving site* that is to be governed by a site specific instrument. The reason for this is the need to ensure that a public body has oversight over the conduct of the risk assessment. Therefore, as part of its process for issuing the site specific instrument, the responsible public body would review or engage in a peer review of the risk assessment as part of its process when assessing the *receiving site*. Another reason for requiring the oversight of a public body is that the risk assessment may rely on the implementation of risk management measures beyond those permitted by the SSBRAT and therefore should be incorporated into any site specific instrument that the public body will issue to govern deposit of *excess soil* at the *receiving site*. This includes specifying the level and mechanism to determine compliance with any related rules and professional best practices, such as approvals, review, peer review, application through a site specific instrument, etc. It is expected that over time different agencies may identify a range of risk assessment approaches that may be used by applicants who apply for site specific instruments governing the deposit of *excess soil* at *receiving sites*.

Medium Volume Standards

TABLE A: PROPOSED Full Depth Excess Soil Reuse Standard in A Potable Ground Water Condition and A Source Size of Less Than 5000m^3

Contaminant	Agricultural and Other Property Use (µg/g)	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Acenaphthene	1.4	1.4	1.4
Acenaphthylene	0.093	0.093	0.093
Acetone	2.6	2.6	2.6
Aldrin	0.05	0.05	0.088
Anthracene	0.11	0.16	0.16
Antimony	7.5 [a]	7.5 [a]	40 [a]
Arsenic	11	18	18
Barium	390 [a]	390 [a]	670 [a]
Benzene	0.02	0.02	0.02
Benz[a]anthracene	0.5	0.5	0.96
Benzo[a]pyrene	0.078	0.3	0.3
Benzo[b]fluoranthene	0.78	0.78	0.96
Benzo[ghi]perylene	6.6	6.6	9.6
Benzo[k]fluoranthene	0.78	0.78	0.96
Beryllium	4 [a]	4 [a]	8 [a]
Biphenyl 1,1'-	0.31	0.31	31
Bis(2-chloroethyl)ether	0.5 [a]	0.5 [a]	0.5 [a]
Bis(2-chloroisopropyl)ether	0.67	0.67	0.81
Bis(2-ethylhexyl)phthalate	5	5	28
Boron (Hot Water Soluble)*	1.5	1.5	2
Boron (total)	120 [a]	120 [a]	120 [a]
Bromodichloromethane	0.1	0.1	0.1
Bromoform	0.16	0.16	0.16
Bromomethane	0.05	0.05	0.05
Cadmium	1	1.2	1.9 [a]
Carbon Tetrachloride	0.05	0.05	0.05
Chlordane	0.05	0.05	0.05
Chloroaniline p-	0.5	0.5	0.5
Chlorobenzene	0.4	0.4	0.4
Chloroform	0.057	0.057	0.16
Chlorophenol, 2-	0.25	0.25	0.25
Chromium Total	160 [a]	160 [a]	160 [a]
Chromium VI	8 [a]	8 [a]	8 [a]
Chrysene	1.3	2.8	2.8
Cobalt	22 [a]	22 [a]	80 [a]
Copper	140 [a]	140 [a]	230 [a]

Contaminant	Agricultural and Other Property Use (µg/g)	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Cyanide (CN-)	0.051	0.051	0.051
Dibenz[a h]anthracene	0.1	0.1	0.1
Dibromochloromethane	0.16	0.16	0.16
Dichlorobenzene, 1,2-	0.083	0.083	0.083
Dichlorobenzene, 1,3-	1.6	1.6	1.6
Dichlorobenzene, 1,4-	0.05	0.05	0.05
Dichlorobenzidine, 3,3'-	1	1	1
Dichlorodifluoromethane	2.6	2.6	2.6
DDD	3.3	3.3	4.6
DDE	0.26	0.26	0.52
DDT	0.078	1.4	1.4
Dichloroethane, 1,1-	0.05	0.05	0.05
Dichloroethane, 1,2-	0.05	0.05	0.05
Dichloroethylene, 1,1-	0.05	0.05	0.063
Dichloroethylene, 1,2-cis-	0.063	0.063	0.063
Dichloroethylene, 1,2-trans-	0.05	0.05	0.063
Dichlorophenol, 2,4-	1.7 [a]	1.7 [a]	3.4 [a]
Dichloropropane, 1,2-	0.05	0.05	0.05
Dichloropropene,1,3-	0.05 [a]	0.05 [a]	0.05 [a]
Dieldrin	0.05	0.05	0.05
Diethyl Phthalate	11 [a]	11 [a]	21 [a]
Dimethylphthalate	17 [a]	17 [a]	34 [a]
Dimethylphenol, 2,4-	2.6	2.6	2.6
Dinitrophenol, 2,4-	2	2	2
Dinitrotoluene, 2,4 & 2,6-	0.5	0.5	0.5
Dioxane, 1,4	0.2	0.51	0.51
Dioxin/Furan (TEQ)	0.000013	0.000013	0.000099
Endosulfan	0.04	0.04	0.075
Endrin	0.04	0.04	0.04
Ethylbenzene	0.051	0.051	0.051
Ethylene dibromide	0.05 [a]	0.05 [a]	0.05 [a]
Fluoranthene	0.69	0.69	1.6
Fluorene	10	10	10
Heptachlor	0.15	0.15	0.19
Heptachlor Epoxide	0.11 [a]	0.11 [a]	0.14 [a]
Hexachlorobenzene	0.19	0.19	0.19
Hexachlorobutadiene	0.01	0.01	0.014
Hexachlorocyclohexane Gamma-	0.01	0.01	0.01
Hexachloroethane	0.01	0.01	0.033
Hexane (n)	2.8	2.8	8.8
Indeno[1 2 3-cd]pyrene	0.38	0.38	0.76
Lead	45	120	120

Contaminant	Agricultural and Other Property Use (µg/g)	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Mercury	0.25	0.27	2.2
Methoxychlor	0.13	0.13	0.63
Methyl Ethyl Ketone	11	11	11
Methyl Isobutyl Ketone	1.7	1.7	24
Methyl Mercury **	0.0014	0.0014	0.0014
Methyl tert-Butyl Ether (MTBE)	0.05	0.05	0.11
Methylene Chloride	0.1	0.1	0.33
Methlynaphthalene, 2-(1-) ***	0.99	0.99	2
Molybdenum	6.9 [a]	6.9 [a]	40 [a]
Naphthalene	0.59	0.59	6.3
Nickel	100 [a]	100 [a]	270 [a]
Pentachlorophenol	0.1	0.1	0.48
Petroleum Hydrocarbons F1****	17	25	25
Petroleum Hydrocarbons F2	10	10	37
Petroleum Hydrocarbons F3	300	300	1300
Petroleum Hydrocarbons F4	2800	2800	3300
Phenanthrene	1.2	1.2	1.2
Phenol	7.6	7.6	7.6
Polychlorinated Biphenyls	0.35	0.35	1.1
Pyrene	16	16	16
Selenium	2.4 [a]	2.4 [a]	5.5 [a]
Silver	20 [a]	20 [a]	40 [a]
Styrene	0.7	0.7	3.2
Tetrachloroethane, 1,1,1,2-	0.05	0.05	0.05
Tetrachloroethane, 1,1,2,2-	0.05	0.05	0.05
Tetrachloroethylene	0.05	0.05	0.063
Thallium	1	1	3.3 [a]
Toluene	0.44	0.44	0.44
Trichlorobenzene, 1,2,4-	0.18	0.18	2.8
Trichloroethane, 1,1,1-	0.38	0.38	1.4
Trichloroethane, 1,1,2-	0.05	0.05	0.05
Trichloroethylene	0.05	0.05	0.05
Trichlorofluoromethane	0.65	0.65	0.65
Trichlorophenol, 2,4,5-	0.62	0.62	0.62
Trichlorophenol, 2,4,6-	0.14	0.14	0.14
Uranium	23 [a]	23 [a]	33 [a]
Vanadium	86	86	86
Vinyl Chloride	0.02	0.02	0.02
Xylene Mixture	0.56	0.56	0.56
Zinc	340 [a]	340 [a]	340 [a]
Electrical Conductivity (mS/cm)	0.7	0.7	1.4
Chloride	N/A	N/A	N/A

Contaminant	Agricultural and Other Property Use (µg/g)	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Sodium Adsorption Ratio	5	5	12
Sodium	N/A	N/A	N/A

Notes

N/A Not applicable

* The boron standards are for hot water soluble extract for all surface soils. For subsurface soils the standards are for total boron (mixed strong acid digest), since plant protection for soils below the root zone is not a significant concern.

** Analysis for methyl mercury only applies when mercury (total) standard is exceeded

*** The methyl naphthalene standards are applicable to both 1-methyl naphthalene and 2- methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

**** F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result.

a Additional requirement for leachate analysis (please refer to Table A.1 of Appendix IV)

TABLE B: Proposed Full Depth Excess Soil Standards in a Non-Potable Ground Water Condition and A Source Size of Less Than 5000m^3

Contaminant	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Acenaphthene	7.8	45
Acenaphthylene	0.093	0.093
Acetone	2.6	2.6
Aldrin	0.05	0.088
Anthracene	0.16	0.16
Antimony	7.5 [a]	40 [a]
Arsenic	18	18
Barium	390 [a]	670 [a]
Benzene	0.02	0.049
Benz[a]anthracene	0.5	0.96
Benzo[a]pyrene	0.3	0.3
Benzo[b]fluoranthene	0.78	0.96
Benzo[ghi]perylene	6.6	9.6
Benzo[k]fluoranthene	0.78	0.96
Beryllium	4 [a]	8 [a]
Biphenyl 1,1'-	0.31	31
Bis(2-chloroethyl)ether	0.5	0.5
Bis(2-chloroisopropyl)ether	0.67	11
Bis(2-ethylhexyl)phthalate	5	28
Boron (Hot Water Soluble)*	1.5	2
Boron (total)	120 [a]	120 [a]
Bromodichloromethane	8.2	8.2
Bromoform	3.5	3.5
Bromomethane	0.05	0.056
Cadmium	1.2	1.9 [a]
Carbon Tetrachloride	0.05	0.05
Chlordane	0.05	0.05
Chloroaniline p-	0.5	0.5
Chlorobenzene	0.4	0.4
Chloroform	0.057	0.97
Chlorophenol, 2-	1.6	3.1
Chromium Total	160 [a]	160 [a]
Chromium VI	8 [a]	8 [a]
Chrysene	7	9.6
Cobalt	22 [a]	80 [a]
Copper	140 [a]	230 [a]
Cyanide (CN-)	0.051	0.051
Dibenz[a h]anthracene	0.1	0.1
Dibromochloromethane	7.9	7.9

Contaminant	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Dichlorobenzene, 1,2-	3.4	6.8
Dichlorobenzene, 1,3-	4.8	9.6
Dichlorobenzene, 1,4-	0.05	0.13
Dichlorobenzidine, 3,3'-	1	1
Dichlorodifluoromethane	2.6	2.6
DDD	3.3	4.6
DDE	0.26	0.52
DDT	1.4	1.4
Dichloroethane, 1,1-	0.085	1.5
Dichloroethane, 1,2-	0.05	0.05
Dichloroethylene, 1,1-	0.05	0.064
Dichloroethylene, 1,2-cis-	0.078	1.4
Dichloroethylene, 1,2-trans-	0.05	0.73
Dichlorophenol, 2,4-	1.7	3.4
Dichloropropane, 1,2-	0.05	0.065
Dichloropropene,1,3-	0.05	0.05
Dieldrin	0.05	0.05
Diethyl Phthalate	11 [a]	21 [a]
Dimethylphthalate	17 [a]	34 [a]
Dimethylphenol, 2,4-	64	64
Dinitrophenol, 2,4-	9.6	9.6
Dinitrotoluene, 2,4 & 2,6-	0.92	1.2
Dioxane, 1,4	1.8	1.8
Dioxin/Furan (TEQ)	0.000013	0.000099
Endosulfan	0.04	0.075
Endrin	0.04	0.04
Ethylbenzene	2.1	2.7
Ethylene dibromide	0.05	0.05
Fluoranthene	0.69	9.6
Fluorene	10	10
Heptachlor	0.15	0.19
Heptachlor Epoxide	0.11 [a]	0.14 [a]
Hexachlorobenzene	0.52	0.66
Hexachlorobutadiene	0.01	0.014
Hexachlorocyclohexane Gamma-	0.01	0.01
Hexachloroethane	0.01	0.14
Hexane (n)	2.8	8.8
Indeno[1 2 3-cd]pyrene	0.38	0.76
Lead	120	120
Mercury	0.27	2.2
Methoxychlor	0.13	0.63
Methyl Ethyl Ketone	16	37

Contaminant	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Methyl Isobutyl Ketone	1.7	24
Methyl Mercury **	0.0014	0.0014
Methyl tert-Butyl Ether (MTBE)	0.05	0.2
Methylene Chloride	0.1	1.2
Methlynaphthalene, 2-(1-) ***	0.99	12
Molybdenum	6.9 [a]	40 [a]
Naphthalene	0.59	9.4
Nickel	100 [a]	270 [a]
Pentachlorophenol	0.1	0.48
Petroleum Hydrocarbons F1****	25	25
Petroleum Hydrocarbons F2	10	37
Petroleum Hydrocarbons F3	300	1700
Petroleum Hydrocarbons F4	2800	3300
Phenanthrene	6.2	12
Phenol	7.6	7.6
Polychlorinated Biphenyls	0.35	1.1
Pyrene	78	96
Selenium	2.4 [a]	5.5 [a]
Silver	20 [a]	40 [a]
Styrene	0.7	11
Tetrachloroethane, 1,1,1,2-	0.05	0.05
Tetrachloroethane, 1,1,2,2-	0.05	0.05
Tetrachloroethylene	0.05	0.17
Thallium	1	3.3 [a]
Toluene	2.3	11
Trichlorobenzene, 1,2,4-	0.18	2.8
Trichloroethane, 1,1,1-	0.38	1.6
Trichloroethane, 1,1,2-	0.05	0.05
Trichloroethylene	0.05	0.05
Trichlorofluoromethane	0.65	0.65
Trichlorophenol, 2,4,5-	4.4	4.4
Trichlorophenol, 2,4,6-	0.61	0.61
Uranium	23 [a]	33 [a]
Vanadium	86	86
Vinyl Chloride	0.02	0.02
Xylene Mixture	1.3	4.3
Zinc	340 [a]	340 [a]
Electrical Conductivity (mS/cm)	0.7	1.4
Chloride	N/A	N/A
Sodium Adsorption Ratio	5	12
Sodium	N/A	N/A

Notes

N/A Not applicable

* The boron standards are for hot water soluble extract for all surface soils. For subsurface soils the standards are for total boron (mixed strong acid digest), since plant protection for soils below the root zone is not a significant concern.

** Analysis for methyl mercury only applies when mercury (total) standard is exceeded

*** The methyl naphthalene standards are applicable to both 1-methyl naphthalene and 2- methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

**** F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result.

a Additional requirement for leachate analysis (please refer to Table A.2 of Appendix IV)

Volume Independent Standards

TABLE C: Proposed Full Depth Volume Independent Excess Soil Standards in a Potable Ground Water Condition

Contaminant	Agricultural and Other Property Use (µg/g)	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Acenaphthene	0.25	0.25	0.25
Acenaphthylene	0.093	0.093	0.093
Acetone	0.5	0.5	0.5
Aldrin	0.05	0.05	0.088
Anthracene	0.078	0.16	0.16
Antimony	7.5 [a]	7.5 [a]	40 [a]
Arsenic	11	18	18
Barium	390 [a]	390 [a]	670 [a]
Benzene	0.02 [a]	0.02 [a]	0.032 [a]
Benz[a]anthracene	0.5	0.5	0.96
Benzo[a]pyrene	0.078	0.3	0.3
Benzo[b]fluoranthene	0.78	0.78	0.8
Benzo[ghi]perylene	6.6	6.6	9.6
Benzo[k]fluoranthene	0.78	0.78	0.79
Beryllium	4 [a]	4 [a]	8 [a]
Biphenyl 1,1'-	0.3	0.3	7
Bis(2-chloroethyl)ether	0.5 [a]	0.5 [a]	0.5 [a]
Bis(2-chloroisopropyl)ether	0.5	0.5	0.5
Bis(2-ethylhexyl)phthalate	5	5	9.9
Boron (Hot Water Soluble)*	1.5	1.5	2
Boron (total)	120 [a]	120 [a]	120 [a]
Bromodichloromethane	13 [a]	13 [a]	18 [a]
Bromoform	0.05	0.05	0.05
Bromomethane	0.05 [a]	0.05 [a]	0.05 [a]
Cadmium	1	1.2	1.9 [a]
Carbon Tetrachloride	0.05 [a]	0.05 [a]	0.05 [a]
Chlordane	0.05	0.05	0.05
Chloroaniline p-	20 [a]	20 [a]	40 [a]
Chlorobenzene	0.083	0.083	0.083
Chloroform	0.05	0.05	0.05
Chlorophenol, 2-	0.1	0.1	0.1
Chromium Total	160 [a]	160 [a]	160 [a]
Chromium VI	8 [a]	8 [a]	8 [a]
Chrysene	0.24	2.8	2.8
Cobalt	22 [a]	22 [a]	80 [a]
Copper	140 [a]	140 [a]	230 [a]
Cyanide (CN-)	0.051	0.051	0.051

Contaminant	Agricultural and Other Property Use	Residential/ Parkland/Institutional Property Use	Industrial/ Commercial/Community Property Use
Dibenz[a h]anthracene	0.1	0.1	0.1
Dibromochloromethane	0.05	0.05	0.05
Dichlorobenzene, 1,2-	0.05	0.05	0.05
Dichlorobenzene, 1,3-	0.26	0.26	0.26
Dichlorobenzene, 1,4-	0.05 [a]	0.05 [a]	0.12 [a]
Dichlorobenzidine, 3,3'-	1	1	1
Dichlorodifluoromethane	1.5	1.5	1.5
DDD	3.3	3.3	4.6
DDE	0.26	0.26	0.52
DDT	0.078	1.4	1.4
Dichloroethane, 1,1-	0.05 [a]	0.05 [a]	0.56 [a]
Dichloroethane, 1,2-	0.05 [a]	0.05 [a]	0.05 [a]
Dichloroethylene, 1,1-	0.05 [a]	0.05 [a]	0.057 [a]
Dichloroethylene, 1,2-cis-	0.05 [a]	0.05 [a]	0.55 [a]
Dichloroethylene, 1,2-trans-	0.05 [a]	0.05 [a]	0.1 [a]
Dichlorophenol, 2,4-	1.7 [a]	1.7 [a]	3.4 [a]
Dichloropropane, 1,2-	0.05 [a]	0.05 [a]	0.05 [a]
Dichloropropene,1,3-	0.05 [a]	0.05 [a]	0.05 [a]
Dieldrin	0.05	0.05	0.05
Diethyl Phthalate	11 [a]	11 [a]	21 [a]
Dimethylphthalate	17 [a]	17 [a]	34 [a]
Dimethylphenol, 2,4-	0.43	0.43	0.43
Dinitrophenol, 2,4-	38 [a]	38 [a]	320 [a]
Dinitrotoluene, 2,4 & 2,6-	0.92 [a]	0.92 [a]	1.2 [a]
Dioxane, 1,4	0.2 [a]	1.8 [a]	1.8 [a]
Dioxin/Furan (TEQ)	0.000013	0.000013	0.000022
Endosulfan	0.04	0.04	0.054
Endrin	0.04	0.04	0.04
Ethylbenzene	0.05	0.05	0.05
Ethylene dibromide	0.05 [a]	0.05 [a]	0.05 [a]
Fluoranthene	0.29	0.56	0.56
Fluorene	7.3	7.3	7.3
Heptachlor	0.15	0.15	0.19
Heptachlor Epoxide	0.11 [a]	0.11 [a]	0.14 [a]
Hexachlorobenzene	0.034	0.034	0.034
Hexachlorobutadiene	0.01	0.01	0.01
Hexachlorocyclohexane Gamma-	0.01	0.01	0.01
Hexachloroethane	0.01	0.01	0.01
Hexane (n)	0.05	0.05	0.46
Indeno[1 2 3-cd]pyrene	0.38	0.38	0.76
Lead	45	120	120
Mercury	0.25	0.27	1.9
Methoxychlor	0.13	0.13	0.45

Contaminant	Agricultural and Other Property Use	Residential/ Parkland/Institutional Property Use	Industrial/ Commercial/Community Property Use
Methyl Ethyl Ketone	0.5	0.5	0.5
Methyl Isobutyl Ketone	0.53	0.53	0.53
Methyl Mercury **	0.00098	0.00098	0.00098
Methyl tert-Butyl Ether (MTBE)	0.05 [a]	0.05 [a]	0.11 [a]
Methylene Chloride	0.05	0.05	0.05
Methlynaphthalene, 2-(1-) ***	0.35	0.59	0.59
Molybdenum	6.9 [a]	6.9 [a]	40 [a]
Naphthalene	0.59	0.59	1.1
Nickel	100 [a]	100 [a]	270 [a]
Pentachlorophenol	0.1	0.1	0.34
Petroleum Hydrocarbons F1****	17	25	25
Petroleum Hydrocarbons F2	10	10	27
Petroleum Hydrocarbons F3	240	240	240
Petroleum Hydrocarbons F4	2800	2800	3300
Phenanthrene	0.21	0.69	0.69
Phenol	2.4	2.4	2.4
Polychlorinated Biphenyls	0.35	0.35	1.1
Pyrene	2.8	2.8	2.8
Selenium	2.4 [a]	2.4 [a]	5.5 [a]
Silver	20 [a]	20 [a]	40 [a]
Styrene	0.5	0.5	0.53
Tetrachloroethane, 1,1,1,2-	0.05	0.05	0.05
Tetrachloroethane, 1,1,2,2-	0.05 [a]	0.05 [a]	0.05 [a]
Tetrachloroethylene	0.05 [a]	0.05 [a]	0.064 [a]
Thallium	1	1	3.3 [a]
Toluene	0.2	0.2	0.2
Trichlorobenzene, 1,2,4-	0.17	0.17	0.51
Trichloroethane, 1,1,1-	0.1	0.1	0.12
Trichloroethane, 1,1,2-	0.05 [a]	0.05 [a]	0.05 [a]
Trichloroethylene	0.05 [a]	0.05 [a]	0.05 [a]
Trichlorofluoromethane	0.17	0.26	0.26
Trichlorophenol, 2,4,5-	0.11	0.11	0.11
Trichlorophenol, 2,4,6-	0.1	0.1	0.1
Uranium	23 [a]	23 [a]	33 [a]
Vanadium	86	86	86
Vinyl Chloride	0.02 [a]	0.02 [a]	0.02 [a]
Xylene Mixture	0.091	0.091	0.091
Zinc	340 [a]	340 [a]	340 [a]
Electrical Conductivity (mS/cm)	0.7	0.7	1.4
Chloride	N/A	N/A	N/A
Sodium Adsorption Ratio	5	5	12
Sodium	N/A	N/A	N/A

Notes

N/A Not applicable

* The boron standards are for hot water soluble extract for all surface soils. For subsurface soils the standards are for total boron (mixed strong acid digest), since plant protection for soils below the root zone is not a significant concern.

** Analysis for methyl mercury only applies when mercury (total) standard is exceeded

*** The methyl naphthalene standards are applicable to both 1-methyl naphthalene and 2- methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

**** F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result.

a Additional requirement for leachate analysis (please refer to Table A.1 of Appendix IV)

TABLE D: PROPOSED Full Depth Volume Independent Excess Soil Standards in a Non-Potable Ground Water Condition

Contaminant	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Acenaphthene	7.8	38
Acenaphthylene	0.093	0.093
Acetone	1.8	1.8
Aldrin	0.05	0.088
Anthracene	0.16	0.16
Antimony	7.5 [a]	40 [a]
Arsenic	18	18
Barium	390 [a]	670 [a]
Benzene	0.02	0.032
Benz[a]anthracene	0.5	0.96
Benzo[a]pyrene	0.3	0.3
Benzo[b]fluoranthene	0.78	0.96
Benzo[ghi]perylene	6.6	9.6
Benzo[k]fluoranthene	0.78	0.96
Beryllium	4 [a]	8 [a]
Biphenyl 1,1'-	0.3	22
Bis(2-chloroethyl)ether	0.5	0.5
Bis(2-chloroisopropyl)ether	0.5	11
Bis(2-ethylhexyl)phthalate	5	28
Boron (Hot Water Soluble)*	1.5	2
Boron (total)	120 [a]	120 [a]
Bromodichloromethane	5.9	5.9
Bromoform	2.5	2.5
Bromomethane	0.05 [a]	0.05 [a]
Cadmium	1.2	1.9 [a]
Carbon Tetrachloride	0.05 [a]	0.05 [a]
Chlordane	0.05	0.05
Chloroaniline p-	0.5	0.5
Chlorobenzene	0.28	0.28
Chloroform	0.05	0.1
Chlorophenol, 2-	1.6	2.4
Chromium Total	160 [a]	160 [a]
Chromium VI	8 [a]	8 [a]
Chrysene	7	9.6
Cobalt	22 [a]	80 [a]
Copper	140 [a]	230 [a]
Cyanide (CN-)	0.051	0.051
Dibenz[a h]anthracene	0.1	0.1
Dibromochloromethane	5.6	5.6

Contaminant	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Dichlorobenzene, 1,2-	3.4	6.8
Dichlorobenzene, 1,3-	4.8	6.9
Dichlorobenzene, 1,4-	0.05	0.05
Dichlorobenzidine, 3,3'-	1	1
Dichlorodifluoromethane	1.9	1.9
DDD	3.3	4.6
DDE	0.26	0.52
DDT	1.4	1.4
Dichloroethane, 1,1-	0.05	0.15
Dichloroethane, 1,2-	0.05	0.05
Dichloroethylene, 1,1-	0.05	0.05
Dichloroethylene, 1,2-cis-	0.05	0.14
Dichloroethylene, 1,2-trans-	0.05	0.05
Dichlorophenol, 2,4-	1.7	3.4
Dichloropropane, 1,2-	0.05	0.05
Dichloropropene,1,3-	0.05	0.05
Dieldrin	0.05	0.05
Diethyl Phthalate	11 [a]	21 [a]
Dimethylphthalate	17 [a]	34 [a]
Dimethylphenol, 2,4-	46	46
Dinitrophenol, 2,4-	6.8	6.8
Dinitrotoluene, 2,4 & 2,6-	0.92	1.2
Dioxane, 1,4	1.8	1.8
Dioxin/Furan (TEQ)	0.000013	0.000099
Endosulfan	0.04	0.054
Endrin	0.04	0.04
Ethylbenzene	1.9	1.9
Ethylene dibromide	0.05 [a]	0.05 [a]
Fluoranthene	0.69	9.6
Fluorene	7.3	7.3
Heptachlor	0.15	0.19
Heptachlor Epoxide	0.11 [a]	0.14 [a]
Hexachlorobenzene	0.52	0.66
Hexachlorobutadiene	0.01	0.01
Hexachlorocyclohexane Gamma-	0.01	0.01
Hexachloroethane	0.01	0.13
Hexane (n)	0.05	0.46
Indeno[1 2 3-cd]pyrene	0.38	0.76
Lead	120	120
Mercury	0.27	1.9
Methoxychlor	0.13	0.45
Methyl Ethyl Ketone	14	27

Contaminant	Residential/ Parkland/Institutional Property Use (µg/g)	Industrial/ Commercial/Community Property Use (µg/g)
Methyl Isobutyl Ketone	0.89	17
Methyl Mercury **	0.00098	0.00098
Methyl tert-Butyl Ether (MTBE)	0.05	0.05
Methylene Chloride	0.059	0.2
Methlynaphthalene, 2-(1-) ***	0.92	8.9
Molybdenum	6.9 [a]	40 [a]
Naphthalene	0.59	9.4
Nickel	100 [a]	270 [a]
Pentachlorophenol	0.1	0.34
Petroleum Hydrocarbons F1****	25	25
Petroleum Hydrocarbons F2	10	27
Petroleum Hydrocarbons F3	300	1700
Petroleum Hydrocarbons F4	2800	3300
Phenanthrene	6.2	12
Phenol	5.4	5.4
Polychlorinated Biphenyls	0.35	1.1
Pyrene	78	96
Selenium	2.4 [a]	5.5 [a]
Silver	20 [a]	40 [a]
Styrene	0.5	6.9
Tetrachloroethane, 1,1,1,2-	0.05	0.05
Tetrachloroethane, 1,1,2,2-	0.05	0.05
Tetrachloroethylene	0.05	0.05
Thallium	1	3.3 [a]
Toluene	0.99	7.9
Trichlorobenzene, 1,2,4-	0.17	1.3
Trichloroethane, 1,1,1-	0.1	0.4
Trichloroethane, 1,1,2-	0.05	0.05
Trichloroethylene	0.05 [a]	0.05 [a]
Trichlorofluoromethane	0.46	0.46
Trichlorophenol, 2,4,5-	3.2	3.2
Trichlorophenol, 2,4,6-	0.44	0.44
Uranium	23 [a]	33 [a]
Vanadium	86	86
Vinyl Chloride	0.02 [a]	0.02 [a]
Xylene Mixture	0.84	3.1
Zinc	340 [a]	340 [a]
Electrical Conductivity (mS/cm)	0.7	1.4
Chloride	N/A	N/A
Sodium Adsorption Ratio	5	12
Sodium	N/A	N/A

Notes

N/A Not applicable

* The boron standards are for hot water soluble extract for all surface soils. For subsurface soils the standards are for total boron (mixed strong acid digest), since plant protection for soils below the root zone is not a significant concern.

** Analysis for methyl mercury only applies when mercury (total) standard is exceeded

*** The methyl naphthalene standards are applicable to both 1-methyl naphthalene and 2- methyl naphthalene, with the provision that if both are detected the sum of the two must not exceed the standard.

**** F1 fraction does not include BTEX; however, the proponent has the choice as to whether or not to subtract BTEX from the analytical result.

a Additional requirement for leachate analysis (please refer to Table A.2 of Appendix IV).

TABLE E: Leachate Standards Required for a Potable Ground Water Condition

Contaminant of Potential Concern	TABLE A: Full Depth Excess Soil Standards in A Potable Ground Water Condition and A Source Size of Less Than 5000m^3			TABLE C: Full Depth Volume Independent Excess Soil Standards in a Potable Ground Water Condition		
	Agricultural and Other Property Use (µg/L)	Residential/ Parkland/ Institutional Property Use (µg/L)	Industrial/ Commercial/ Community Property Use (µg/L)	Agricultural and Other Property Use (µg/L)	Residential/ Parkland/ Institutional Property Use (µg/L)	Industrial/ Commercial/ Community Property Use (µg/L)
Antimony	6	6	6	6	6	6
Barium	1000	1000	1000	1000	1000	1000
Beryllium	4	4	4	4	4	4
Bis(2-chloroethyl)ether	5	5	5	5	5	5
Boron (total)	5000	5000	5000	5000	5000	5000
Bromodichloromethane	-	-	-	16	16	16
Bromomethane	-	-	-	0.89	0.89	0.89
Cadmium	-	-	0.55	-	-	0.5
Carbon Tetrachloride	-	-	-	0.79	0.79	0.79
Chloroaniline p-	-	-	-	10	10	10
Chromium Total	50	50	50	50	50	50
Cobalt	3	3	3	3	3	3
Copper	18	18	18	14	14	14
Dichlorobenzidine, 3,3'-	-	-	-	0.5	0.5	0.5
Dichloroethane, 1,1-	-	-	-	5	5	5
Dichloroethane, 1,2-	-	-	-	1.6	1.6	1.6
Dichloroethylene, 1,1-	-	-	-	1.6	1.6	1.6
Dichloroethylene, 1,2-cis-	-	-	-	1.6	1.6	1.6
Dichloroethylene, 1,2-trans-	-	-	-	1.6	1.6	1.6
Dichloropropane, 1,2-	-	-	-	5	5	5
Dichloropropene,1,3-	0.5	0.5	0.5	0.5	0.5	0.5
Diethyl Phthalate	7.8	7.8	7.8	6	6	6
Dimethylphthalate	7.8	7.8	7.8	6	6	6
Dinitrophenol, 2,4-	-	-	-	10	10	10
Dinitrotoluene, 2,4 & 2,6-	-	-	-	5	5	5
Dioxane, 1,4	-	-	-	50	50	50

Contaminant of Potential Concern	TABLE A: Full Depth Excess Soil Standards in A Potable Ground Water Condition and A Source Size of Less Than 5000m^3			TABLE C: Full Depth Volume Independent Excess Soil Standards in a Potable Ground Water Condition		
	Agricultural and Other Property Use (µg/L)	Residential/ Parkland/ Institutional Property Use (µg/L)	Industrial/ Commercial/ Community Property Use (µg/L)	Agricultural and Other Property Use (µg/L)	Residential/ Parkland/ Institutional Property Use (µg/L)	Industrial/ Commercial/ Community Property Use (µg/L)
Ethylbenzene	-	-	-	1.6	1.6	1.6
Ethylene dibromide	0.2	0.2	0.2	0.2	0.2	0.2
Heptachlor Epoxide	0.01	0.01	0.01	0.01	0.01	0.01
Methyl tert-Butyl Ether (MTBE)	-	-	-	15	15	15
Molybdenum	70	70	70	70	70	70
Nickel	100	100	100	78	78	78
Selenium	13	13	13	10	10	10
Silver	0.31	0.31	0.31	0.3	0.3	0.3
Tetrachloroethane, 1,1,2,2-	1	1	1	1	1	1
Tetrachloroethylene	-	-	-	1.6	1.6	1.6
Thallium	-	-	2	-	-	2
Trichloroethane, 1,1,2-	-	-	-	4.7	4.7	4.7
Trichloroethylene	-	-	-	1.5	1.5	1.5
Uranium	20	20	20	20	20	20
Vinyl Chloride	-	-	-	0.5	0.5	0.5
Zinc	230	230	230	180	180	180

Notes - Not applicable

TABLE F: Leachate Standards Required for a Non-Potable Ground Water Condition

Contaminant of Potential Concern	TABLE B: Full Depth Excess Soil Standards in A Non-Potable Ground Water Condition and A Source Size of Less Than 5000m^3		TABLE D: Full Depth Volume Independent Excess Soil Standards in a Non-Potable Ground Water Condition	
	Residential/ Parkland/ Institutional Property Use (µg/L)	Industrial/ Commercial/ Community Property Use (µg/L)	Residential/ Parkland/ Institutional Property Use (µg/L)	Industrial/ Commercial/ Community Property Use (µg/L)
Antimony	4200	4200	3200	3200
Barium	6000	6000	4600	4600
Beryllium	14	14	11	11
Boron (total)	9200	9200	7100	7100
Bromomethane	-	-	5.8	5.8
Cadmium	-	0.55	-	0.5
Carbon Tetrachloride	-	-	0.79	0.79
Chromium Total	170	170	130	130
Cobalt	14	14	10	10
Copper	18	18	14	14
Diethyl Phthalate	7.8	7.8	6	6
Dimethylphthalate	7.8	7.8	6	6
Ethylene dibromide	-	-	0.25	0.25
Heptachlor Epoxide	0.01	0.01	0.01	0.01
Molybdenum	1900	1900	1500	1500
Nickel	100	100	78	78
Selenium	13	13	10	10
Silver	0.31	0.31	0.3	0.3
Thallium	-	100	-	80
Trichloroethylene	-	-	1.5	1.5
Uranium	2	2	2	2
Vinyl Chloride	-	-	0.5	0.5
Zinc	230	230	180	180

Notes - Not applicable

DEFINITIONS

"Applied chemical and/or biological treatment of ex-situ soil" means a process to remediate soil that involves the addition of reactants to the soil to degrade the contaminants (mostly organic contaminants).

"Archaeological Site" means any property that contains an artifact or any other physical evidence of past human use or activity that is of cultural heritage value or interest as in Ontario Regulation 170/04 under the Ontario Heritage Act.

"Area of potential environmental concern" (APEC) means an area on, in or under a property where one or more contaminants are potentially present, as determined through the phase one environmental site assessment, including through,

(a) identification of past or present uses on, in or under the phase one property, and

(b) identification of *potentially contaminating activity*;

"Authorized Person" means either a *proponent* or a person authorized to sign on behalf of a *proponent*, which may include a foreman, supervisor, etc.

"Building" has the same meaning as in the *Building Code Act, 1992*, S.O. 1992, c. 23.

"Building Code" means O. Reg. 332/12 (Building Code) made under the *Building Code Act, 1992*, S.O. 1992, c. 23.

"Construct" has the same meaning as in the *Building Code Act, 1992*, S.O. 1992, c. 23.

"Contaminants of Potential Concern" (COPC) means contaminants that may potentially be present in *soil* or groundwater at levels of concern.

"Environmentally sensitive area" means:

1. An area reserved or set apart as a provincial park or conservation reserve under the *Provincial Parks and Conservation Reserves Act, 2006*.
2. A wetland, a coastal wetland or an area of natural and scientific interest (life science or earth science) identified by the Ministry of Natural Resources as having provincial significance, or a wetland or coastal wetland that is not yet evaluated to determine whether it is provincially significant.
3. A stream, including an intermittent stream, and an area adjacent to a wetland or stream identified by a municipality as riparian protection area, however expressed, and encompassing an area of not less than 30 metres from the wetland or stream.
4. A significant woodland identified by a municipality in accordance with the Provincial Policy Statement.

5. An area of ground water recharge or discharge identified by a municipality in accordance with the Provincial Policy Statement and a significant ground water recharge area identified in an assessment report under the Clean Water Act.
6. An area designated by a municipality in its official plan as environmentally significant, however expressed, including designations of areas as environmentally sensitive, as being of environmental concern and as being ecologically significant.
7. An area designated as an escarpment natural area or an escarpment protection area by the Niagara Escarpment Plan under the *Niagara Escarpment Planning and Development Act*.
8. An area identified by the Ministry of Natural Resources as significant habitat of a threatened or endangered species.
9. An area which is habitat of a species that is classified under section 7 of the *Endangered Species Act, 2007* as a threatened or endangered species.
10. Property within an area designated as a natural core area or natural linkage area [or recharge areas] within the area to which the Oak Ridges Moraine Conservation Plan under the *Oak Ridges Moraine Conservation Act, 2001* applies.
11. An area set apart as a wilderness area under the *Wilderness Areas Act*;

"EPA" means the *Environmental Protection Act,* R.S.O. 1990, c. E.19.

"Excess soil",

(a) means soil and sediment, which is to be removed from a property or *project area* as part of a development project,
(b) may include a mixture with incidental amounts of other finely divided material that is similar to soil (e.g., *rock*, debris, and other materials) provided, based on visual inspection, the other material is not subject to ECAs or requirements under Part V of the *EPA*, and the mixture existed pre-excavation of the soil (i.e. not as a result of purposeful mixing), and
(c) does not include soil or *rock* removed from a pit or quarry regulated under the Aggregate Resources Act or a pit or quarry that would be so regulated if it was operating in an area to which the Aggregate Resources Act applies
(d) Ceases to be *excess soil* when it is *liquid waste*

"Excess Soil Hauling Record" is a record of the movements for each individual truckload of *excess soil* that includes information set out in this document

"Excess soil processing site" means a waste disposal site accepting *excess soil*, including *excess soil* that is *liquid waste*, and which physically, chemically and/or biologically processes *excess soil* (including treating, remediating, mixing, sorting, filtering, dewatering, etc.).

"Forced aeration/vacuum treatment" means the application of a mechanically-induced pressure gradient across the air mass within a soil pile for the purposes of separating and removing contaminants from the soil through accelerated contaminant volatilization.

"Infrastructure project" means an undertaking related to development of highways, streets, roads, and bridges; mass transit; airports; water supply and water resources; wastewater management; solid-waste treatment and disposal; electric power generation and transmission; telecommunications; and hazardous waste management

"Landfarming" means the biodegradation of petroleum refining wastes by naturally occurring soil bacteria by means of controlled application of the wastes to land followed by periodic tilling, as set out in Regulation 347

"Liquid waste" means waste that has a slump of more than 150 millimetres using the Test Method for the Determination of Liquid Waste (slump test) as set out in Schedule 9 of Regulation 347.

"On-site soil processing" means the processing of excavated soil that has yet not left the site for the purposes of effecting chemical or physical change to the excavated soil.

"Owner" includes, in relation to a *receiving site, soil processing site, soil bank,* or landfill, as the case may be, a property manager/agent of the owner and a person with charge, management or control of the *receiving site, soil processing site, soil bank,* or landfill.

"phase one study area" means the area that includes the project area, any other property that is located wholly or partly, within 250 metres from the nearest point on a boundary of the project area and any other property that the QP determines should be included in the phase one study area

"Potentially contaminating activity" (PCA) means a use or activity set out in Column A of Table 2 of Schedule D of O. Reg. 153/04.

"Project", means an undertaking that involves the excavation of soil and the removal of the soil from the property and includes,

(a) The development or redevelopment of land including any undertaking that includes the construction or reconstruction of a *building* or structure on property
(b) An infrastructure project

"Project area" means the property owned or controlled by the proponent within which the proponent's project is undertaken and if a project is being undertaken on more than one property, then two or more properties owned or controlled by the proponent may only be

included as part of the same project area for a project where those properties are contiguous or would otherwise be considered contiguous except for separation by a road.

"Proponent" means the owner or person having charge, management or control of a *project.*

"Public body" means,

(a) a municipality, local board or conservation authority,
(b) a ministry, board, commission, agency or official of the Government of Ontario, or
(c) a body that has been prescribed by the regulations or an official of such a body

"Receiving site" means a site where *excess soil* is deposited for final reuse, or at a soil processing site or soil bank, and does not include a *TESSS*.

"Reuse of Excess Soil At Receiving Sites", means a document that provides land use based standards for the reuse of *excess soil*, as amended from time to time and available from the MOECC.

"Rock" means a naturally occurring aggregation of one or more naturally occurring minerals that is 2 millimetres or larger in size or that does not pass the US #10 sieve.

"Shoring" means structures which help support trench and excavation walls to prevent movement of soil during excavation.

"Site specific instrument or by-law" means any instrument under a provincial Act or any instrument under a federal Act that can regulate the quality or quantity of *excess soil* deposited at a *receiving site*, and includes the following:

i. a by-law under section 142 of the *Municipal Act* or a permit issued pursuant to a by-law passed under that section,
ii. a licence or permit issued under the *Aggregate Resources Act or,*
iii. an approval under the Planning Act that can regulate the quality or quantity of excess soil deposited at a receiving site

"Soil" means unconsolidated naturally occurring mineral particles and other naturally occurring material, smaller than 2 millimetres in size or that pass a US #10 sieve, resulting from the natural breakdown of *rock* or organic matter by physical, chemical or biological processes. This is taken from Ontario Regulation 153/04 and has the same meaning.

"Soil bank" means an *excess soil* storage site where *excess soil* is temporarily stored for reuse at another location and may store *excess soil* from multiple *project areas* and multiple proponents.

"Soil, Ground Water and Sediment Standards" means the "Soil, Ground Water and Sediment Standards for Use under Part XV.1 of the Environmental Protection Act, published by the Ministry and dated April 15, 2011. This is taken from Ontario Regulation 153/04 and has the same meaning.

"Soil heating" means the application of heat to a soil pile in order to raise its temperature for the purposes of removing contaminants from the soil through accelerated volatilization.

"Soil washing" means the comingling of excavated soil with water (whether or not the water has been treated with a surfactant, pH adjuster or other chemical that increases its efficiency as a solvent) for the purposes of separating and removing contaminants from the soil.

"Table 1" means the Table 1 standards within the Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act, published by the Ministry and dated April 15, 2011 and adopted by reference under O. Reg. 153/04.

"TESSS", or temporary *excess soil* storage site, means a site, other than the related *project area* or *receiving site*, at which *excess soil* is temporarily stored for a defined period of time.

"Topsoil" means those horizons in a soil profile, commonly known as the "O" and the "A" horizons, containing organic material and includes deposits of partially decomposed organic matter such as peat. 2001, c. 25, s. 142 (1).