



On-Site and Excess Soils

June 15, 2020: Ministry Announcement - [Delayed Implementation of the Excess Soil Regulation](#)

Wayne Smith C.E.T., C.Chem.

Laboratory Analysis of Leachate

Ontario Regulatory Update. In December 2019, The Ontario Ministry of the Environment, Conservation and Parks came out with the long awaited On-Site and Excess Soil Management Regulation (O. Reg. 406/19) made under the Environmental Protection Act. The purpose of the regulation is to allow for the beneficial re-use of excess soil, and help reduce the associated costs associated with transportation and disposal of excess soil removed from the site. The regulation will begin to take effect on January 2021 with gradual implementation occurring over a phase in period of 2 years. Leachate analysis is now part of the process in order to evaluate whether excess soil could result in unacceptable impacts on groundwater in certain situations based on site conditions and potential contaminants of concern (PCOC). The document “[Rules for Soil Management and Excess Soil Quality Standards](#)” provides additional in depth details on sampling, generic leachate screening levels (LSL), minimum mandatory analysis and procedures.¹

Conducting Leachate Analysis. Most environmental practitioners are familiar with regulation 347/558 and the requirements for performing Method 1311 TCLP Leachate analysis for comparison to Schedule 4 – Leachate Toxic Criteria in order to determine the type of facility that can receive waste. This is still a site condition to consider because there may be heavily impacted soil that cannot be re-used at a reuse site that will need to undergo the Reg 347/558 TCLP extraction procedure and analysis. Many people may be unaware that the Ministry has developed a modified Synthetic Precipitation Leaching Procedure (mSPLP) since the implementation of the regulation and this SPLP procedure is recommended for use with the Excess Soils regulation and leachate screening levels. The TCLP method was provided as an option under the regulation because the modified SPLP method had not yet

been completed by the Ministry when the regulation and rules were published. More details are available on the development of the standards and leachate analysis, see the MECP [Rationale Document for Development of Excess Soil Quality Standards](#).²

It is important to note that the TCLP procedure is designed to characterize waste material based on the ability to leach into a simulated Landfill solution while the SPLP procedure determines the ability of contaminants to leach into a simulated rain water solution. For this reason it is important to evaluate the leachate screening levels using the more appropriate SPLP procedure as recommended by MECP. There are three leachate methods available that are approved for use with the applicable Leachate Screening Levels for the excess soils regulation. They are: (SPLP, TCLP, mSPLP). The Ministry modified SPLP procedure (E9003) is recently approved by the Director. Leachate Screening Levels can be found in [Part II of the Rules Document](#). See page 92³.

Leachate Testing Requirements. Leachate Analysis requirements are dependent on the site conditions and the Contaminants of Potential Concern. The Qualified Person, QP, makes the determination of the contaminants of concern, the applicable standards and the soil volume. Sites with less than or equal to 350m³ are designated as small volume and leachate analysis is not required. For the small volume sites, the bulk analysis tables used for guideline evaluation are Table 1 through 9 tables of the rules document. These are the same as the coarse limits in each category of regulation 153/04.

The Leachate Screening Levels are in Appendix 2 starting on page 92 of the rules document. The units are in ug/L. Leachate analysis for any of the analytes listed in

¹ Ontario Ministry of Environment, Conservation and Parks. 2019. Rules for Soil Management and Excess Soil Quality Standards. ISBN 978-1-4868-3715-1

² Ontario Ministry of Environment. 2019. Rationale Document for Development of Excess Soil Quality Standards. ISBN: 978-1-4868-37099-0.

³ Ontario Ministry of Environment, Conservation and Parks. 2019. Rules for Soil Management and Excess Soil Quality Standards. ISBN: 978-1-4868-3715-1



On-Site and Excess Soils (cont.)

these leachate screening level tables is required if there is maximum concentration provided for that particular analyte, provided the analyte is a contaminant of concern, or is a mandatory Storm Water Pond Sediment analyte. If the contaminant that is listed in the table(s) and for which the symbol “-” or “NA” appears in the cell, leachate analysis is not required.

If an analyte in the Generic bulk soil tables has an “a” beside it then that parameter requires a leachate analysis if it is a contaminant of concern as identified by the QP. This depends on the property type and category used.

It is important to note that the analytes in the Leachate Screening Level tables are not consistent across the tables and property use categories. For this reason it is important to identify which parameters require testing. In Regulation 153/04, the Analytical Protocol document, laboratories are required to report all parameters within an analytical testing group, however, the leachate data for Regulation 406/19 can be reported for individual parameters as mentioned on page 47 of the rules document.

Sampling and Analysis Frequencies for Leachate analysis. Considerations for the sampling plan ►

For more details and information concerning Regulation 406/19 in Ontario, please do not hesitate to contact your client service representative.

1. A minimum of 3 soil samples must be submitted for leachate analysis if less than 600 cubic meters of soil will be excavated.
2. Leachate analysis is applicable to all volume independent projects greater than 350m³.
3. The soil samples submitted for leachate analysis shall be collected from the sampling locations where the highest contaminant concentrations were found from the bulk testing.
4. Leachate analysis should be completed on 10% of the soil samples in addition to the three minimum samples, unless the QP can provide rationale regarding why leachate analysis is not required.
5. For soil excavated from an area of potential environmental concern (APEC) that is stored in stockpiles, the minimum leachate sample frequency is three samples plus 10% of the required number of soil samples detailed in Table 2 of schedule E, to O. Reg. 153/04, Minimum Stockpile Sampling Frequency.
6. For sediment excavated from a storm water management pond the minimum leachate sample requirement frequency is 3 samples plus 10% of the required number of soil samples detailed in clauses iii or iv of paragraph 17 of subsection 2 (3).
7. Excess Soil can only be placed in an environmentally sensitive area if the excess soil meets Table 1 of the excess soil quality standards and the results of any required leachate analysis meets Table 1 of the leachate screening levels.