



October 13, 1994

Members

Advisory Committee on Environmental Standards
40 St. Clair Avenue West, Suite 401
Toronto, Ontario
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Dear ACES,

VF:
CANADIAN ENVIRONMENTAL LAW
ASSOCIATION
CELA BRIEF NO. 249; ACES
Consultation on site as... RN14507

RE: CONSULTATION ON SITE ASSESSMENT AND CLEAN-UP

INTRODUCTION

We appreciate the opportunity to comment on the review of the Ministry of Environment and Energy's guidelines for the clean-up of contaminated sites. Our review of the consultation documents is not exhaustive. We have reviewed the documents in light of longstanding concerns about the limitations of risk assessment as a science for evaluating the risks of toxic chemical exposure. As well, we have reviewed the document in light of our extensive involvement in the effort to reform land use planning in Ontario. The comments below are arranged differently from the list of "consultation questions" that were circulated with the consultation package. However, to varying degrees, our comments respond to all of the questions raised and are arranged in two parts. First, we have prepared comments regarding the use of risk assessment generally and in the proposed guidelines. Second, we have responded to the proposed guidelines by commenting on the document section-by-section.

Overall, we wish to express our support for the need to revise the 1989 Guidelines for the Decommissioning and Cleanup of Sites in Ontario. We accept that the existing guidelines do not provide adequate guidance or flexibility to proponents/landowners regarding clean-up of contaminated lands nor do they provide sufficient assurance of environmental protection. We strongly support the need for urban redevelopment and intensification to enable efficient use of infrastructure, to reduce automobile dependency and to curb urban sprawl. It is clear that much of this redevelopment should and must occur on or adjacent to currently contaminated lands.

However, we have very serious concerns about the reliance on risk assessment in the development of the generic criteria. We are opposed to the site specific risk assessment option as proposed in the guidelines.

Moreover, we find an overall lack of clarity in the guidelines in several areas. First, the document is extremely brief and does not provide particular clear "guidance", other than by

making many references to other guidance documents; some were the subject of this consultation, but most were not. In most cases it is unclear which of these other guidance documents are to be followed and to what degree. Second, the document does not provide clear direction to property owners as to which pathway they should choose to undertake a site clean-up. The related matter of the "hands-off" approach that the MOEE intends to take in the process means that this guidance will have to be sought from hired consultants. Third, it is very unclear what the relationship is between the guidelines (and which clean-up path to take within them) and associated approvals for site clean-up options and procedures (i.e., the various technologies that may or may not be available or for which approvals may or may not be obtainable). It is particularly unclear what role the MOEE will or will not play within these related circumstances (i.e., a "hands-off" role for the guidelines but a very closely involved role in the related matters of approvals for clean-up technologies, waste permits, etc.).

Our principle concern with the proposed guidelines is lack of accountability. Mechanisms to ensure quality control throughout the process of site assessment and site clean-up are extremely weak. We do not agree with the "permit by rule" approach embodied in these guidelines. The role of the MOEE in ensuring its guidelines are met is extremely unclear. Mechanisms for ensuring public involvement and accountability of decisions are similarly weak.

Each of these concerns is discussed in the two sections that follow.

RISK ASSESSMENT

Commentators from public interest and environmental organizations across Canada and the United States have developed extensive, credible critiques of the risk assessment approach to evaluating toxic or other hazardous exposure. A key criticism of the "science" of risk assessment includes the fact that risk assessment involves a complicated series of steps requiring many subjective (and therefore subject to political manipulation) judgements which call into question any claims that risk assessment is an "objective" science.

Risk assessment procedures involve many important scientific limitations including:

- * uncertainties or errors that can result from the extrapolation of high concentrations of chemical exposure in small populations as a means of predicting health effects in large populations exposed to lower concentrations of the same chemical
- * uncertainties or errors that can result from the extrapolation of health effects derived from animal studies (both high dose, short term exposure and low dose, long term exposure) to human health effects
- * a tendency to ignore or be unaware of background sources of exposure to chemicals affecting people or ecosystems leading to exceedances of threshold values established through risk assessment
- * vast areas of uncertainty, variability and errors in areas such as emissions estimates, modelling, limited or inappropriate toxicological data, misuse of epidemiological data, problems associated with exposure estimates, health effects or risk estimates, etc. all of

which can cause errors in the input data and methods of calculation

- * the inability of risk assessment to accommodate real-world situations of multiple chemical exposures of varying doses and durations, i.e., it is incapable of assessing the synergistic and cumulative effects of such multiple exposures
- * the heavy reliance of risk assessment calculations on carcinogenicity as a surrogate measure for any and all chronic health effects to the near total exclusion of other less understood and less studied outcomes such as reproductive, neurological, immunological and endocrine effects
- * the ability to overcome a lack of critically important scientific and empirical data by making best guess assumptions in order to continue the analysis and derive dose-response curves for human exposure estimates
- * the ongoing debate within the "science" of risk assessment over which is the most appropriate model to estimate dose-response relationships of low level chemical exposures (and the fact that different models yield quite different results)
- * the tendency to exclude the most sensitive segments of the population from calculations of risk by not including a wide enough margin of safety (assuming "safe" levels are known or knowable)
- * the many limitations of animal bioassays including the fact that they do not always extend over an animals entire lifetime; the fact that dosing generally starts after weaning therefore skipping the in utero and neonatal period comparable to the first 3 to 6 years of human life (hence, not assessing certain chemicals that are toxic only during early life stages or recognizing that human chemical exposure can be greatest during these sensitive life stages); the complication of the "wasted dose" which is the difference between the lifetime dose and the dose that actually causes disease; and the inappropriate assumption that negative results in animal bioassays indicate safety of a chemical in humans.

Not only are there important scientific limitations to risk assessment, series ethical concerns arise as well. The use of risk assessment tends to impose risks on those that are often most susceptible to harm such as the poor, the elderly, children (including via in utero exposure in pregnant women), and minority groups. Not only are risks imposed without the consent of these groups, risk assessment avoids the ethical problem of imposing risks on those who may not receive a commensurate share of the benefits incurred from whatever activity the risk assessment sanctions. The critical gaps in knowledge that exist in the "science" of risk assessment make the process and the outcome vulnerable to political manipulation. Those with money have the opportunity to influence the outcome.

The level of ignorance and uncertainty about the effects of toxic chemicals is a primary concern in the risk assessment debate. In the face of ignorance of effects, chemicals tend to be treated as "innocent until proven guilty". For example, unknown or poorly understood neurotoxic or immunotoxic effects have to be assumed to be non-existent (or require "best guess" calculations of safety margins) and it is impossible to know if they adequately inform

the risk assessment calculations. Chemicals which are unidentified or untested (including complex mixtures that occur as a result of diverse emission sources to the environment) must similarly be assumed to be safe in the face of vast ignorance about their possible effects.

USE OF RISK ASSESSMENT IN THE PROPOSED GUIDELINES

Reliance on risk assessment occurs in two ways in the Proposed Guidelines for the Clean-up of Contaminated Sites in Ontario: as the underlying rationale for the generic criteria; and in the proposal for site specific risk assessment (both the limited site specific approach and the third alternative from which proponents/landowners can choose).

With respect to the generic criteria, we recognize that various forms of risk assessment are the means by which government agencies assess chemical exposures. We recognize that very little exists in the way of alternatives to this approach aside from the precautionary principle of avoiding use and/or release to the environment of inherently toxic chemicals or chemicals for which toxicity is suspected but unknown. We support the use of the precautionary principle in decisions regarding toxic chemicals as well as the principle of zero discharge of persistent toxic substances. However, we also recognize that the guidelines under review are intended to deal with chemicals that are already in the environment and in revising the guidelines, Ministry of Environment and Energy staff have assessed various methods used in different jurisdictions and tried to choose (and then customize to the Ontario situation) a rigorous approach that has been conservative in the estimation of risk and the incorporation of margins of safety. This approach to refining the estimation of risk from chemical exposure is laudable. Scientific rigour is, of course, important. However, both the generic and the site specific risk assessment approaches embodied in the proposed guidelines, inadequately acknowledge the uncertainties and assumptions that are inherent in the information base used to make these risk decisions.

The "Proposed Guidelines for the Clean-up of Contaminated Sites in Ontario" never refer to the limitations within the science of risk assessment. Part 1 of the document entitled "Rationale for the Development and Application of Generic Soil, Groundwater and Sediment Criteria for Clean-up of Contaminated Sites", states that the Massachusetts Department of Environmental Protection approach to risk assessment has been used and modified to be more appropriate to the Ontario situation. The document states that the MOEE-sponsored committee overseeing the review of the Ontario guidelines "has not critically reviewed the toxicological assessments and exposure scenarios used in the derivation of the Massachusetts Contingency Plan criteria, [however], the toxicological assessments and exposure scenarios carried out by the Massachusetts Department of Environmental Protection and the standard development process have been subject to extensive public consultation and have now been promulgated as soil standards" (page 8).

Part 2 of the "Rationale" document provides the detailed methodology of the risk assessment approach employed in the Massachusetts model. Again, almost no reference is made to the limitations of the science. In fact, the rationale for the Massachusetts approach is based largely on references to a broad range of documents generated primarily by the United States Environmental Protection Agency (USEPA) as that agency has refined its approach to risk assessment.

Finally, a third document, "Proposed Draft - Guidance for the Use of Risk Assessments in Site Clean-ups in Ontario", emphasizes the technical, scientific nature of risk assessment and the need for rigour. However, this document appears to be the only one in which there is explicit acknowledgement that "uncertainty is inherent in the process" (page 1) of risk assessment. It also states that, during risk characterization, "Uncertainty of the overall risk assessment process should be analyzed, quantified (where appropriate) and discussed explicitly" (page 7). The preface to this document states that it is intended to provide general guidance only and it refers readers to both the OMEE guidelines and to related source material, primarily originating from the USEPA.

It is clear that the science underlying the proposed generic criteria and the site specific risk assessment is essentially that developed over the last 10 to 20 years by the USEPA. All of the concerns and criticisms of risk assessment summarized above have been levelled at the USEPA approach. We think it is appropriate and necessary for the proposed guidelines to discuss the limitations and assumptions that are inherent in the risk assessment approach (as recommended in the discussion of "risk characterization" in the third document discussed in the preceding paragraph).

The documents released for consultation give the impression of applying scientific rigour to ensure the avoidance or minimization of risk. However, the many unknowns, uncertainties, and value judgements that arise throughout the application of risk assessment belie this impression of scientific objectivity. We therefore disagree that the proposed title registration should be restricted to Stratified/Non-Potable/SSRA clean-ups (as noted on page 16 of the Proposed Guidelines). Rather, it would be prudent to register any site that has undergone a site clean-up according to the guidelines. More importantly, we do not agree with the proposal for site specific risk assessment where that procedure would generate criteria in lieu of using the generic criteria. The only application of site specific risk assessment that we support is the first option (noted on page 20) of using risk assessment on sensitive sites in order to develop more protective clean-up criteria than the generic criteria (more on this below).

The following sections respond to specific sections of the Proposed Guidelines.

DEVELOPMENT OF GENERIC CRITERIA (PAGE 4)

See comments regarding risk assessment above.

APPLICATION OF THE GENERIC CRITERIA (PAGE 5)

LAND USE DESIGNATIONS (PAGE 5)

It is logical and cost-effective to coordinate site clean-up with the future use of a site, where that use is known, planned or anticipated. A concern arises with the notion of calculating relevant exposures according to different land use categories. It appears that the application of this approach in the industrial/commercial category has omitted pregnant women (specifically their unborn fetuses) as the most sensitive sub-population when exposure estimates are

calculated. Without an exhaustive review, we cannot be sure that this concern is warranted. We have confirmed from the documents that calculations of risk for this land use category have not included children. We can only assume the calculations have also excluded exposure of unborn fetuses through maternal occupational exposure. It is conceivable that there would be instances where pregnant women could be occupationally exposed to chemicals in workplaces that are located on lands that have been remediated to the industrial/commercial category (while such workplaces tend to be male-dominated, jobs such as secretarial and cleaning positions tend to be female-dominated). ACES should investigate whether this concern is warranted. In the case of lead, it does appear that the industrial/commercial standard of 1000 parts per million of lead in soil has not taken this sensitive population into account.

FULL DEPTH AND STRATIFIED DEPTH SOIL CLEAN-UP (PAGE 7)

We agree with the logic and cost effectiveness of the use of stratified depth clean-up so long as the guidelines are modified as noted above to recognize the limitations of the underlying risk assessment approach and there is assurance that the closely related proposal for registration on title of a Director's Order for the site occurs.

The 1.5 metre cut-off point is problematic since it does not allow for excavation of basements (without significantly complicating redevelopment options) and it is also probably insufficient to ensure against toxic exposure during the construction of foundation footings. The rationale for the 1.5 metre cut-off point requires greater explanation including consideration of these two "excavation" issues that will arise under redevelopment scenarios.

For sites with considerable contamination "at depth" it is unclear how the stratified depth clean-up would proceed given the dearth of existing approvals for on-site treatment technologies. The guidelines provide almost nothing in the way of guidance about treatment technologies except a very imposing table (5.1) confirming that just about any approach that is chosen will require at least one legislatively-required approval.

The choice of the stratified depth clean-up is closely linked to the availability (both technically and legally) of treatment technologies and yet the guideline does not discuss them (with the exception of a listing in the bibliography of a 1992 OMEE publication on treatment technologies). If there is a good reason for leaving this discussion out of these guidelines, that reason should probably be provided in the document. Otherwise, there should be a discussion of the issues (technical, legal, financial, etc.) of various treatment technologies or clear reference to where such information is available. Given the uncertainty surrounding the technical and legal status of different treatment technologies, the guideline should be much clearer regarding the relationship between (and availability of information about) the clean-up options proposed and the technologies that can (or cannot, as yet) achieve them.

It seems fair to say that a guideline for site clean-up should provide more than a review of "process" requirements. Proponents/landowners and the public need to know more about the technical and legal status of alternatives to "dig and haul" in order to make (or comment on) the "process" decisions set out in these guidelines. While such information is subject to rapid change, it should at least be discussed in the guidelines with accompanying guidance on how to obtain additional, necessary information.

RELATIONSHIP TO OTHER GUIDELINES AND LEGISLATION (PAGE 8)

The reference to the Municipal Act in this section is incomplete. The Planning Act should be referenced as should the new Comprehensive Set of Policy Statements (more on this below with respect to "Sensitive Sites").

MOEE ADMINISTRATION OF THE GUIDELINE (PAGE 8)

We strongly disagree with the "permit by rule" approach embodied in this guideline. This section recommends that reports generated by property owners as they follow this process, need not be submitted to the Ministry (except under circumstances subsequently described). This hands-off approach raises serious concerns about public availability of information generated by property owners and quality control of documents as property owners move through the steps in the process (more on these issues below).

SITE ASSESSMENT AND CLEAN-UP PROCESS (PAGE 9)

STEP ONE - SITE ASSESSMENT (PAGE 10)

This section and the corresponding section in the "Proposed Draft - Guidance on Sampling and Analytical Methods for Site Clean-ups in Ontario" is quite thin. The discussion of "Step One" in each of these documents is primarily a reference to other guidance documents that were not distributed or the subject of consultation. It is impossible to comment on the usefulness of these other documents although the list is impressive. We believe that the Proposed Guidelines should provide at least a minimum checklist of requirements for this first step.

As currently proposed, there is very little quality control over this document (beyond the check provided by the P.Eng. certification in any "Notice of Clean-up") nor is it clear whether the document would be publicly available. It is strange that such a document could be generated (perhaps very poorly), provide a conclusion of "no problem" on a site, be retained by the property owner alone and through these steps end the site assessment process. Since a "notice of clean-up" does not appear to be required for these kinds of situations, the quality control provided by the P.Eng.'s review of documents (required for later steps in the process) would not occur.

In addition, we note that the site assessment compiled in this Step One document is closely linked to Step Two. As the guideline states, it "will provide an indication of the need and type of sampling and analysis that is required [in Step Two], or may confirm that the site (soil, sediment, ground/surface water) and/or building(s) are free of contamination and that further investigation is not necessary" (page 10).

We believe that this document should be forwarded to the MOEE for review and comment and that it should be publicly available. The "no problem" finding through the preparation of

this first document is of concern. As noted above, no one will know whether the work was done properly or adequately. If land use decisions are made on the basis of a "false positive" result and an early exit from the site assessment process, serious problems could arise for subsequent property owners. It is unclear who would be responsible for any oversights in this initial site assessment particularly if ownership changes.

The encouragement of public consultation at this early stage is laudable but inadequate. The guideline should require property owners to undertake public consultation, explain the rationale for doing so and provide guidance (or reference to guidance) on effective techniques (more on this matter below).

STEP TWO - SAMPLING AND ANALYSIS (PAGE 10)

Again, the "permit by rule" or self-assessment approach contained in these guidelines is highly problematic. The proposed guidelines encourage property owners to pay particular attention to the guidance on quality assurance/quality control provided in the document "Guidance on Sampling and Analytical Methods for Site Clean-ups in Ontario". However, almost no provincial or public role is envisioned for the review (or quality control) of the document generated during the Step Two Environmental Site Assessment. Nor does the guideline provide any means of resolving disputes over the conclusions of Step Two (assuming the information is even publicly available). Yet, the Step Two Environmental Site Assessment can conclude, in a document to be retained by the property owner and not circulated to the MOEE, that a site is free of contamination and that further investigation is not necessary.

Again, it appears that the limited quality control provided by the P.Eng. certification in the "Notice of Clean-up" would not occur under such circumstances.

STEP THREE - SITE CLEAN-UP PLAN (PAGE 12)

The list on page 13 does not seem to include consideration for wastewater discharges as a result of dust control activities, tire washing, etc. Again, the self-assessment process embodied in these guidelines provides a limited means of ensuring quality control over the clean-up plan and of resolving disputes over its adequacy.

STEP FOUR - COMPLETION OF CLEAN-UP (PAGE 15)

Once a clean-up is completed, the self-assessment process continues with the preparation of a "Notice of Clean-up", prepared by a Professional Engineer hired by the property owner. We are concerned about the ability of Professional Engineers to be able to assess the adequacy of work conducted by others in a wide variety of specialized disciplines. Liability concerns arise as well since the "Notice of Clean-up" may be construed as a guarantee by the engineer that a site is clean particularly since the language used in the MOEE "Acknowledgement of Receipt" section of the "Notice of Clean-up" is very explicit in absolving the MOEE of any liability for the site.

We strongly support the notion that property owners, not taxpayers should assume the cost of site clean-ups, preferably those owners who are responsible for the contamination. However, in setting guidelines for site clean-ups, the Province has a responsibility for ensuring that the guidelines are adequately implemented. This responsibility is particularly important since, even though these are only guidance documents, they are closely related to diverse regulatory and legal instruments.

This provincial responsibility for ensuring adequate guideline implementation does not need to include taking on any liability for clean-up of these sites. But, it does appear that the approach of certification by a Professional Engineer of site clean-up shifts an enormous amount of responsibility from the Province to the consulting profession. It would seem likely that this increased liability (or even perception of increased liability) for P.Eng.'s will contribute to higher costs for property owners. More important, given the very large uncertainty associated with the "science" underlying the risk assessment approach (embodied in the generic criteria and the site specific model), especially the subjective nature of many of the decisions upon which these assessments must rely, this exclusive dependence on the judgement of consultant's hired by proponents is very troubling.

We believe that the guidelines should be changed to include a greater review and comment role for the MOEE than is proposed. The approach that would seem the most logical is the use of a trigger at each decision-making point throughout the process whereby the public (or any other government agency or even the proponent) could invoke the involvement of the MOEE. The trigger should be that each time critical steps are taken in the site assessment process (as noted below), the Environmental Bill of Rights Registry should be used to notify the public. These steps should include: the decision to undertake a site assessment; the completion of reports in both Step One and Step Two in which no contamination is found; the completion of all other reports in Step Two; advance notice of start date for implementation of a clean-up plan; and the filing of all "Notices of Clean-up".

For each of these steps in the process, any member of the public should be able to request that the MOEE become involved in the review and comment of relevant documents and in assisting with public consultation around the project. This MOEE involvement should not substitute for the work that proponent's must pay for through hired consultant's. Nor should the MOEE assume any liability by this involvement. The role should be advisory to assist with the interpretation of the guidelines and smooth functioning of public consultation. In particularly large and contentious matters, funding of citizens groups to enable fair and effective participation in such processes should be considered.

This change in the role of the MOEE will affect the language of the "Acknowledgement of Receipt" section of the "Notice of Clean-up" (Appendix 4, page 67). The language as currently drafted does not allow for any MOEE involvement in key steps in the process. The language should be changed to enable MOEE involvement in an advisory capacity that would assist property owners and the public in interpreting the guidelines, acknowledging uncertainties and assumptions, effectively communicating information and assisting with conflict resolution. We note that this kind of advisory involvement is possible when proponents are developing new generic criteria (Section 7.1, page 19).

Finally, we wish to strongly support the proposal to register on land title the MOEE Director's Order. However, we suggest, as noted above in discussing the shortcomings of the risk assessment approach underlying the development of generic criteria, that this title registration include all sites for which a "Notice of Clean-up" has been filed.

GUIDANCE ON SENSITIVE SITES (PAGE 18)

This section does not fully incorporate the new categories of sensitive sites that will arise from the new Planning Act Policy Statements due for promulgation in January of 1995. Two major areas will arise from the Natural Heritage Policy Statements - areas of groundwater recharge, headwaters and sensitive aquifers and the environmentally sensitive areas listed in Policy A1.2 including significant ravine, valley, river, and stream corridors and significant portions of the habitat of endangered and threatened species. An additional consideration arising from these policies is the restriction on development in areas adjacent to these features and the requirement for Environmental Impact Statements to assess development in these areas.

Since the Province has decided, through amendments to the Planning Act, that planning decisions, including the commenting role of all Ministries, "shall be consistent with" all Planning Act policies, the proposed guideline should be reviewed for conflicts, omissions or redundancies. For example, the last paragraph on page 18 does not appear to consider the new Planning Act policy regarding groundwater protection.

SITE SPECIFIC RISK ASSESSMENT (PAGE 20)

The same comments made above regarding the shortcomings of risk assessment apply to this section. We do not support the use of site specific risk assessment as proposed in these guidelines since it would allow for clean-up criteria that are even less protective of the environment than the generic criteria approach.

However, by way of comment on this section in the proposed guidelines, we would like to point out that it is unclear what role the MOEE would play in reviewing and commenting on documents generated through SSRA. The language that is proposed in the "Acknowledgment of Receipt" section of the "Notice of Clean-up" does not allow for MOEE review, consideration or comment on documents. We recommend (above) that this language needs to be changed. And, if the SSRA option remains, the role of the MOEE needs to be clarified. An additional question arises as to the role (and potential liability) of the "qualified, independent reviewer" who will peer review the SSRA in order to resolve any outstanding concerns prior to the submission of documents to MOEE. What is a "qualified, independent reviewer"?

PUBLIC CONSULTATION (PAGE 22)

In addition to the recommendations made above concerning the use of the Environmental Bill of Rights Registry, we have several comments about this section. We do not think it is helpful to include reference (in the first paragraph) to what is most commonly done in public

consultation (i.e., waiting until Step Two). Since the guideline recommends that public consultation begin earlier, then the guideline should say why it is important and perhaps discuss the possible pitfalls of ignoring such an important step or at least refer to other guidance documents that are of assistance. The recommendation for notification taking place a minimum of 30 days in advance of an clean-up plan is crucial.

For particularly contentious sites, the MOEE can anticipate phone calls from concerned members of the public at any points in this process where public notice occurs. If the self-assessment approach proposed in these guidelines is adopted it is fair to say that public doubts about the safety of the clean-up will increase when they discover that the Province will not be involved in the review and clean-up process.

We strongly support the goals of public consultation as listed on page 23. However, the rest of the section provides very little guidance on how to achieve these goals particularly for situations involving complex, controversial sites. These kinds of situations are where guidance is needed. This section should be expanded to deal with these more difficult situations or provide reference to additional guidance documents.

We strongly support the recommendation for full public access to documents generated during the site assessment process (i.e., the Step One and Step Two site assessment documents, etc.).

CONCLUSION


The shortcomings of the "science" of risk assessment for making judgements about toxic chemical exposure must be recognized in the proposed guidelines for site clean-ups. Understanding that there is little in the way of alternatives to this approach, it is still essential that there be an acknowledgement of its significant shortcomings. The precautionary principle of avoiding the use and release of toxic chemicals is difficult to apply when we are dealing with the matter of lands that are already contaminated, often very seriously. However, we can apply this principle to our judgements about risk assessment by recognizing the vastness of our ignorance, the certainty of our (perhaps) unintentional errors, and the need to maintain a perpetual reminder of the dangers that we leave in the ground.


We cannot support the "permit-by-rule" approach embodied in these guidelines nor does it make a lot of sense given the closely related approvals function that the MOEE will continue to play in the regulation of activities associated with contaminated sites. We believe that the approach recently taken in British Columbia would have been a better model for Ontario to emulate than that applied in Massachusetts. The British Columbia model is legislatively-based and comprehensive in that it deals with the many related aspects of contaminated lands (standards for clean-up procedures, related legal instruments, liability issues, etc.) in one integrated package.

We encourage the ACES to recommend modifications to the proposed guidelines to inject much needed public accountability and greater caution in the use of the "science" of risk assessment.

Yours very truly,

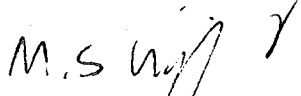
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