

MINISTRY UPDATES

WINTER 2018

- A new version of Protocol 4 is available [here](#)
- A new version of Protocol 13 is available [here](#)
- Personnel Announcements: New Acting Director at Land Remediation.

A The Land Remediation Section is pleased to welcome Alan McCammon is our new acting Director. Alan will fill this role into the fall when Danielle Grbavac returns.

Recent relative CS e-links issued by the Ministry of Environment and Climate Change Strategy are available [here](#).

SUMMER 2018

- The Ministry is requesting your assistance to complete a survey regarding the suite of contaminated site services provided by the Land Remediation Section. The survey is part of an internal Ministry effort to examine and evaluate the ways in which contaminated sites services are provided in support of administering the *Environmental Management Act* and Contaminated Sites Regulation, and feedback will inform efforts to improve the client experience in obtaining these services. Take [survey here](#).

The survey takes approximately 10 minutes to complete, allowing for more or less time depending on how many or few contaminated sites services you use. The survey is open for approximately 6 weeks, and will close on September 5, 2018. Questions regarding the survey can be forwarded to site@gov.bc.ca.

- Progress report on clean-up of contaminated sites has been released, see [here](#).

SPRING 2018

- The Ministry has recently confirmed they will accept area-based searches of the Site Registry completed on iMap when meeting the requirements of a Stage 1 Preliminary Site Investigation for an area-based search of the Site Registry. The site layer can be accessed on iMap by clicking the “Add Provincial Layers” in the “Maps & Data Sources” tab, expanding the “Waste” catalog and selecting the “Environmental Remediation Sites” layer. Practitioners are still welcome to use the area-based search tool on BC Online if that is their preference. When necessary, Site Registry detailed reports will still need to be obtained from BC Online. [See here for detailed instructions](#).
- Necessary amendments to Schedule 1.1 of the Contaminated Sites Regulation (Summary of Site Condition; SoSC) were not made as part of the Stage 10/11 updating of the Regulation. Key changes that will need to be made in a future stage of CSR amendment include updating of references to CSR numerical standards schedules and references to new land and vapour use categories which were introduced as part of the most recent CSR amendments. In the interim, the Ministry is requesting that Approved Professionals appropriately modify the SoSC form, prior to signing and submission, to reflect the current version of the Regulation; in particular:
 - sections 7.1 and 7.2 of the SoSC should be updated to reference CSR Schedules 3.1 through 3.4, as appropriate; and
 - section 4.4 of the SoSC should clearly identify applicable land and vapour uses for the site.

- The Ministry is presently working with CSAP to provide input to a proposed ‘fillable’ Summary of Site Condition (SoSC) form that will incorporate the needed updates and which can be used by Approved Professionals for submission purposes.
- **Metals from Filters and Gloves causing False Positives**

AECOM recently noticed while conducting QA/QC on a project that copper concentrations were elevated. Additional work by Leslie Southern (**Thank You Leslie!**) identified that metals (including barium, copper, lithium, zinc, etc.) were being added to the samples by the inline filter and zinc was being added to the samples from the nitrile gloves. Hemmera independently verified the findings with a separate laboratory finding copper and zinc present in a filter blank and nitrate, strontium, titanium, and zinc from a nitrile glove blank. Check the flushing procedure for the filter type that you use. Additional information from AECOM can be found [here](#).

WINTER 2018

ENV Webinars

Stage 11 Webinar Recordings and Presentations have been posted.

The PowerPoint presentations and audio recordings for the webinars hosted in November and December 2017 are now available on the ministry’s [Presentations](#) website. These webinars were to help stakeholders understand the changes to the recently approved Stage 11 amendments to the Contaminated Sites Regulation.

The webinars covered the following topics:

- Webinar 1 - Stage 10 (Omnibus) and Stage 11 (Housekeeping) Amendments
- Webinar 2 - Provincial and Regional Background Concentrations in Soil and Summary of Risk Assessment Updates
- Webinar 3 - Updates to Provincial Vapour Standards and Policy
- Webinar 4 - OMRR amendments and Stage 11 CSRA process
- Webinar 5 - Protocol 27, Soil Leachate Tests for Use in Deriving Site-Specific Numerical Soil Standards. Protocol 2, Site-Specific Numerical Soil Standards
- Webinar 6 - Screening Level Risk assessment (SLRA) Update

The following 2 documents have been updated:

- [Technical Guidance 24 – Site Specific Numerical Soil Standards Model Parameters](#)
- [Protocol 2 – Site Specific Numerical Soil Standards](#)

The changes in these documents provide clarity to questions received from stakeholders:

- Site-specific soil standards (SSSs) can only be derived on sites where groundwater has been or will be investigated
- For pH sensitive substances, site-specific values for pH in soil are required when deriving SSSs for inorganics
- The vertical distance between the base of the source and the water table cannot exceed 10 m

FALL 2017

ENV would like to remind everyone that additional information on [Errata #5](#) has been posted through [CS e-link](#).

The ministry would like to request that APs work with their clients to ensure that submissions associated with Scenario 4 and 5 release requests (Site Profiles) and performance verification plans are submitted to the ministry by the required dates.

ENV Webinars

The following is a list of proposed webinar topics to be presented by ENV late November through early December:

Stage 10 Amendment to the CSR Overview: Stage 11 housekeeping amendment and errata, new documents, next steps
Protocol 2, Site Specific numerical soil standards model + Protocol 27, Leachate Protocol
Updates to vapour assessment and vapour attenuation factors
Screening Level Risk Assessment Update
Updated CSRA process and OMRR OIC
Background Soil Concentration Update, Determination of Carcinogenic Substances, and Risk Assessment Guidance

ENV has indicated that dates are to be announced and that the topic list is subject to change.

SUMMER 2017

- Land Remediation Section (LRS) staff of the Ministry of Environment and Climate Change Strategy based in Victoria have new phone numbers. Previous phone numbers that started with 250-387-xxxx or 250-356-xxxx no longer connect you with a staff member. The new phone numbers are of the format: 778-698-xxxx. To reach ministry staff, use the online government directory: <https://dir.gov.bc.ca/> or use the Enquiry BC service (Mon. to Fri., 7:30 am – 5:00 pm):
 - Vancouver 604-660-2421
 - Elsewhere in B.C. 1-800-663-7867
 - Outside B.C. 604-660-2421
- The MoE would like to remind members that the deadline for application of submissions prior to the Stage 10 amendment coming into force is 5:00 pm PDT on Oct. 31, 2017 (for both CSAP and ministry submissions). Reference should be made to [Administrative Bulletin 3](#).
- *The following question was posed to the MoE: How will MoE handle additional AG11 information received after Nov 1st while the submission is in the queue to be processed (assuming that the submission is allotted the full 60 day consultation period prior to Nov 1st)?*

MoE's Response: If comment is received from an affected party after the comment period has ended and after the submission has been forwarded to CSAP, but prior to issuance of a legal

instrument, these comments must be promptly forwarded to the ministry for the director's consideration. Applications subject to these circumstances may be vulnerable to appeal or rejection if the comments raised by the affected party are determined to be valid, and addressing the comments would require additional investigation and/or remediation.

- The MoE has also indicated the following for sites where leaseholders are completing remediation of leased property:

Ministry Expectations for consultation with Parties that may be impacted by director's decisions.

When making decisions pursuant to authorities granted by the Environmental Management Act and Contaminated Sites Regulation, it is the director's obligation to ensure that parties that may be affected by the decision have been consulted in accordance with the principals of administrative fairness. It is the ministry's expectation that those consultations have been completed prior to the ministry receiving the recommendation from CSAP to issue a legal instrument. The most common scenario for affected parties is contamination that has migrated onto their property from an adjacent source. The ministry's expectations for this scenario are clearly laid out in Administrative Guidance 11; however, the principles of AG-11 should also be applied by leaseholders seeking CS instruments. In this scenario the expectation for leaseholders to communicate with property owners with whom they hold a lease flows from the director's obligations to consult with potentially affected third parties. Without provision of a communication record consistent with the principals of AG-11, the director has no basis to determine whether the principals of administrative fairness had been complied with during consultation with an affected party. This may result in an application being considered incomplete or of insufficient quality for a director's decision.

SPRING 2017

Scenario 1 (P6): COC application that requires a pre-approval, where the pre-approval has been sent in before Oct 31 (but no response prior to Nov 1), there will be a delay in the submission until after Nov 1. How will MOE handle this situation?

- In order to allow for adequate time for the ministry to process any approvals for submissions to proceed to the CSAP society under protocol 6, approval applications should be received by the ministry as early as possible. [Administrative Bulletin 3](#) describes the administrative process for legal instrument applications being submitted during the regulatory transition period ending October 31, 2017. In order for a submission to be considered "complete and of sufficient quality for the director to give adequate consideration to the application" any and all required approvals must be included at the time the application is made.

Scenario (AG11): A submission has been made to CSAP and the paperwork is with MOE for signature, but there are delays due to AG11 issues (i.e., offsite party is not content/unresponsive), will that application need to be re-submitted under the new standards (if MOE finds the AG11 is incomplete)?

In order for an Approved Professional to demonstrate that an application is "complete and of sufficient quality for the director to give adequate consideration to the application" the relevant site information must have been presented to the affected parties, with appropriate time granted for response as per AG-11 at the time of application. If comment is received from an affected party after the comment period has ended but prior to completion of the CSAP screening or performance assessment processes, it is the expectation that affected party's concerns will be addressed as per item 2 below and, where unresolved, flagged for consideration by the director.

If comment is received from an affected party after the comment period has ended and after the submission has been forwarded to the director for signature, but prior to issuance of a legal instrument, these comments must be promptly forwarded to the ministry for the director's consideration.

1. For those parties that are non-responsive, in order for an application to be considered complete, the submitting AP must ensure communication has been attempted in accordance with Administrative Guidance 11. *"The source parcel owner is expected to provide to the affected parcel owner in writing by registered letter, the information shown in Appendix 2 item 2). If a written response is not received by the source parcel responsible person within 30 days, the ministry expects the source parcel responsible person to contact the affected parcel owner again, this time by telephone, email or in person requesting a response to the original communication. If contact is made, a request must be made by the source parcel responsible person for a response to the registered letter within an additional 30 days from the time of the telephone, e-mail or personal contact."*
2. For those parties that respond to the applicant, and object to the terms and conditions of a legal instrument, in order for an application to be considered complete, the submitting AP must either:
 - a) obtain agreement from the affected party regarding the terms and conditions of legal instrument issuance, or
 - b) in instances where agreement cannot be reached, address the comments received by the affected party and cite the rationale for making the recommendation for issuance of the legal instrument. These instances of unresolved differences should be identified for the directors consideration in the detailed screening worksheet.

It is the ministry's experience that option "b" above is not uncommon for affected parcels remediated by application of risk assessment where the assessment assumes use limitations to current and future use of the parcel (e.g., depth restrictions for building foundations).

For submitting APs pursuing options 1 or 2b, please note that applications made under these circumstances may be vulnerable to rejection if the restrictions are deemed inconsistent by the director with section 12(5) of the CSR. Applications brought forward under options 1 or 2b may also be vulnerable to appeal according to Part 8 of EMA. If an application is rejected, or the director is instructed to rescind a legal instrument by a ruling from the Environmental Appeal Board or other legal tribunal, subsequent applications made after November 1, 2017 would be subject to the new standards in the stage 10 amendment.

[WINTER 2017](#)

Omnibus related documents

- A set of 8 webinars explaining the CSR Omnibus amendments are available here: <http://www2.gov.bc.ca/gov/content/environment/air-land-water/site-remediation/guidance-resources/presentations>
- Re-issued [Administrative Bulletin 3](#). This Bulletin has been amended and re-posted to provide the following clarification: the advice in the document applies to both numerical and risk-based CSR instruments submitted during the transition year up to October 31, 2017. The previous version incorrectly stated that the advice in the Bulletin applied only to numerical instruments.

Any questions about this CSeLink should be directed to site@gov.bc.ca

APs are advised to review Bulletin 3 carefully.

Submissions received at CSAP by 5:00 pm PDT Oct 31 2017 will be processed as usual including any submissions selected for a Performance Assessment; however if found deficient a resubmission would be subject to the new standards. CSAP will be assessing resources closer to Oct 31st to prepare for whatever increase in volume may occur and will do our best to maintain our timeline dependent on circumstances.

Detailed Screening: Risk Condition Where Ambient Monitoring is Conducted

- Through the screening process it is understood that where vapours were confirmed to have been remediated by measurement of indoor ambient air in the parkade of the new building constructed on the site, APs should confirm that there was no HVAC system operating at the time of vapour sampling and provide the rationale for concluding that worst-case samples were collected.

Amended instrument conditions in these cases the revised clause should read:

“The documents listed in Schedule D indicate that indoor air within the underground parkade of the existing building at the site was measured to demonstrate substances in vapour meet the Contaminated Sites Regulation numerical standards at the site. The assumption of the vapour assessment is:

- a) The current building structure, configuration and depth must be maintained;

Any change in the structure, configuration or depth of the current building at the site must be promptly identified by the responsible person in a written submission to the Director. An application for an amendment or new Certificate of Compliance may be necessary.”

FALL 2016

Omnibus related documents being prepared once the MO is deposited.

- In anticipation of the consequential amendments to the Contaminated Sites Regulation Ministry staff have prepared a package of supporting material that would be released when amendments are deposited.
- These material include:
 - “Update on Contaminated Sites – Stage 10 Amendments to the CSR” (provides a high level overview of what is included in this CSR amendment and the HWR and OMRR consequential amendments).
 - “Administrative Bulletin – Errata for the Stage 10 (Omnibus) Amendment to the CSR” (this is a list of currently known errors in the CSR Amendment Schedules that will be fixed prior to bringing the regulation into force – the plan is that this document will be updated throughout the transition year as other typos, etc are found).
 - “Administrative Bulletin – Application Submission: CSR Omnibus Amendment Transition” (describes how applications for legal instruments will be processed in the transition year).

The plan is to post these to the Ministry’s website and send a CSeLink and email to stakeholders with links to the documents.

- The Ministry is also working on a schedule of webinars that we will be holding from mid-November to early December. That schedule will also be sent via CSeLink and email.

Protocol 2 Renewal

- The ministry has committed to work with CSAP to review the current version of the ministry's groundwater model and identify relevant parameters that practitioners can modify in the groundwater model when developing site-specific soil standards under Protocol 2. The anticipated output will be a draft Technical Report that a) summarizes the methods and/or guidance for developing parameters and ranges for parameters that can be input into the groundwater model, b) defines the required model documentation, including examples, that will allow Approved Professionals to adequately review and approve site-specific soil standards developed under a revised Protocol 2, and c) provides relevant examples of real or hypothetical sites in which site-specific soil standards are derived using the modified input parameters to the model. The Technical Report will be used by the ministry to update Protocol 2 and prepare a Technical Guidance document.

Leachate test review

- The ministry has committed to work with CSAP to identify, review and recommend the selection of scientifically appropriate and cost effective leachate test methods for both inorganic and organic contaminants to prescribe in the protocol with the selected methods to be included in the BC Environmental Laboratory Manual. The work will include provide for the development of the framework for how leachate test methods may be utilized under Protocol 2 and seek to establish the minimum requirements for site – specific investigation for leachate characterization of contaminated soil. The final product will include the preparation of a draft protocol to document the approved leachate testing framework for use at contaminated sites and the minimum requirements for leachate characterization of contaminated soil

Glyn's Premier's award

- Dr. Glyn Fox received the Premier's Legacy Award on October 18, 2016 and has been inducted into the BC Public Service Hall of Excellence. The BC Public Service Hall of Excellence was established to recognize those individuals who have made exceptional and lasting contributions to the province of British Columbia and is the highest form of recognition that the BC Public Service can extend to its employees. Dr. Fox has provided expert toxicological and risk assessment advice and expertise to the ministry for over 27 years and has led both the former Science and Standards Section of the Environmental Management Branch, and the Science and Standards Unit of the Land Remediation Section for more than 20 years.

[View Glyn Fox Legacy video](#)

Update on HWR/CSR Decoupling

- LRS continues to field questions about the implementation of the CSR/HWR decoupling. Under the amended regime, it is acceptable to treat soil qualifying as "on site media" on the contaminated site of origin and to dispose of it at an off-site landfill permitted to receive the treated soil. Should there be any discharge to the environment in the management of the soil prior to its acceptance at the landfill, you will require a separate authorization under the *Environmental Management Act* (EMA) Please also note the requirements of Protocol 3 – Blending, Mixing or Dilution as a Remediation Approach.
- LRS is working on the development of additional protocols to more fully support the decoupling provisions and, in the meantime, we appreciate consultants submitting details about their proposed soil treatment/stabilization process to ensure that the remediation strategy is in compliance with the regulations.

1. What obligation does an Approved Professional have to consider comments from affected parties beyond the 60 days indicated in AG#11?

The intent of AG-11 is to provide the Director with a record that all parties that may be affected by a Director's decision have been provided with appropriate information, and an opportunity to provide comment. It is the expectation that **complete** communication records are provided when an AP forwards a recommendation to the Ministry for issuance of a legal instrument. If comments are pending at the time of submission, the communication record would be deemed incomplete.

Not only does the complete communication record need to be provided, but it should be submitted in such a way that it is organized and follows a logical sequence to ensure that the flow of communication can be easily followed by the Director. Gaps in the communication record should be clearly identified and, for large communication records, they should be indexed for ease of reference. Best practices observed have included indexed records of all notifications sent, received and returned or rejected. For those notices returned or rejected, documentation of subsequent measures to serve notice and to engage with affected parties or parties with a registered interest should also be provided.

If a reasonable request for additional time in which to provide comment is made, in order to demonstrate that the Director has adjudicated the decision fairly, the additional time should be granted. Also, if additional information has been received prior to signoff of a ministry instrument this information should be forwarded to the director for due consideration.

The requirement for the Director to ensure all parties have been fairly consulted does not lie in AG-11; they come from administrative law and the concepts of procedural fairness and natural justice. Section 133 of the *Environmental Management Act* provides instruction on serving of notice.

CSAP has created an AG11 communications template which may assist you with preparing your summation and it is posted to the CSAP Website.

2. What happens when a notice of offsite migration is retracted?

Fact sheet #34 indicates that the suspect affected property owner should be notified in writing that migration has not occurred. This notification should be copied to the ministry and appropriate changes will be made to the site record for the source and affected parcel. This would normally consist of the addition of Case Management Item notations for both sites indicating that contaminant migrations is not known to have occurred.

3. Questions were raised with MOE about the requirements for arms length review when a Preapproval has been applied for and the Director's decision is to grant relief from delineation and remediation of the entire extent of contamination. MOE has clarified that the arms length requirements is a separate issue and the requirements as outlined below still apply to the AP conducting a review.

- Requirements for arm's length review of applications for CoCs are set out in Rows #4 and #5 of Table 1 of Procedure 3 (Ministry Procedures for the Roster of Approved Professionals).
- Protocol 6, V9 clarifies under Items 4.7 and 4.8 the requirements for submissions from applicants that are responsible persons and not responsible persons, respectively.

A CSAP Standards AP asked for clarification as to whether the arms length provisions for the Review of Risk Based instruments applied to both the Risk AP and the Standards AP or only to the Risk AP. In response to the inquiry the following clarification was received from MOE.

The Ministry of Environment has recently clarified the "Ministry Procedures for the Roster of Approved Professionals" that it is not acceptable under Rows 2 and 5 of Table 1 (**Approved Professional Work and requirements for arm's length review**) for a numerical standards Approved Professional to self review the numerical standards portion of a Protocol 6 submission (other than a screening level risk

assessment) for a risk-based standards Approval in Principle or Certificate of Compliance. The arms length review requirement applies whether or not the contamination extends off of the site.

4. Questions were raised about the use of SLRA as flow through sites.

MOE confirmed that if the site is a flow through site and the contamination is solely due to flow through contaminants and the owner is not a responsible person for the source site, SLRA can be used to obtain a risk based CoC without consideration of pathways beyond the boundaries of the affected property under HW-3, AW-3 and DF-2. The prohibition on groundwater migrating beyond the property boundary at concentrations >DW standards is also waived in this circumstance.

To use this approach, you need to 1) prove that conditions are “flow through” based on field evidence and records/statements regarding the owner’s absence of responsibility for the source site 2) assess the affected property fully to meet CoC requirements and 3) show that there is no potential for concentrations coming onto the property to change in the future which could require monitoring in a PVP if the source site hasn’t been investigated or remediated. You will need to indicate in the SoSC the flow through nature of the contamination as explanation for why delineation of the entire extent of contamination beyond the affected property boundaries has not been completed. The ministry also likes to see correspondence with the source site owner as there may be a need to follow up on notification requirements.

The MOE has also confirmed that an application for a risk-based CoC for a property affected by flow through contamination and made on behalf of the affected property owner with no responsibility for the source site. This would fall into the “[Ministry Procedures for the Roster of Approved Professionals](#)” Table 1 row 4, column 3 (i.e. “no offsite contaminant migration”) category of AP review and arms length review would not be required.

SPRING 2016

Required information on water use determinations in SOSCs

The ministry continues to check the Summary of Sites Condition (SOSC) in Protocol 6 submissions for information on water use determinations made under Protocol 21 “Water Use Determination” (P21). A number of submissions continue to have insufficient detail to support an exemption of drinking water use and a few submissions provide incorrect information.

On a site where a specified water use (DW, AW, IW or LW) has been determined not to apply using the criteria in P21, the arguments for the water use exemption must be included in the SOSC under Section 4.2 “Site Conditions”. The information needs to be of sufficient detail, including supporting data, to show compliance with P21 for every geological unit exempted from a specified water use.

Water use determinations are site specific, but below are some examples of information/data required in the SOSC for DW exemptions:

- No current DW use:
 - No DW use within 500 m; or
 - Proof of natural confining barrier (NCB) protecting DW aquifer.
- Unit near marine or estuarine foreshore:
 - Site located within infilled marine or estuarine foreshore; or
 - Site located within 500 m; include sodium and chloride data.
- Unit does not qualify as a viable aquifer:
 - Include K-value (Kmax if <6 wells or Kgeometric mean if ≥6 wells).
 - For bedrock; include both K-value and measured yield.
- Unit qualifies as a natural confining barrier:
 - Include NCB type (Type A or Type B);
 - Include K-value (Kmax if <6 wells or K90th percentile if ≥6 wells);
 - Include proof of sufficient thickness (depending on NCB type);
 - Include proof of contaminant free (depending on NCB type); and
 - Include statement regarding unit being continuous, uniform and fracture free.

- Exemption of shallow aquifers:
 - Proof unit is not hydraulically connected to underlying viable aquifer; i.e. show underlying NCB or no underlying viable aquifers; and
 - Include exemption criteria for shallow aquifer:
 - i. Not viable aquifer; include K-value; ii. Saturated thickness less than 2 m; iii. Aquifer in fill;
 - iv. Aquifer in peat; include organic content (% organic matter by weight); or v. Aquifer has poor natural water quality; include TDS (mg/L).

If a Director's determination of water use has been obtained on the site, please mention the decision in the SOSC. For questions regarding water use determinations please contact Amy Sloma or Annette Mortensen.

PSI requirements for Determinations of non-contamination

When can a Determination that a site is not a contaminated site be requested on the basis of a PSI Stage 1 investigation alone?

- When a PSI Stage 1 is conducted on a Schedule 2 use site and no APECs are identified on the site or on neighbouring sites that could cause contamination of the site for which the Determination is sought.
- Technical Guidance 10 outlines the ministry's general expectations for Stage 1 and Stage 2 PSIs. Although not explicit in TG10, it is implicit that Stage 2 PSIs, and DSIs if warranted, will occur where APECs are identified. The ministry is in the process of revising TG10 and TG11 to adopt the 2015 CSAP Practice Guidelines which are more current and comprehensive than existing TG10 and 11.

Note: As a general rule, the ministry does not support requests for Determinations that a site is not a contaminated site for sites that are not captured under the CSR, effectively non Schedule 2 use sites. There may be exceptions. Recall that non Schedule 2 use sites become Schedule 2 use sites when they receive a NOM indicating they have been or likely have been contaminated by substances migrating from other properties (CSR, Sched 2, E10). If Determinations of non-contamination are sought for a non Schedule 2 use site, the same requirements apply as for a Schedule 2 use site, PSI Stage I investigations would be required to identify APECs on both the site seeking the Determination and on neighbouring sites, and if APECs were identified (such as an underground heating oil tank on a residential property), PSI Stage II investigations would need to be conducted to demonstrate the site was uncontaminated.

Minor Changes to Determination Template

- Clause 1 of Schedule B refers to "Determination of Contaminated Site" twice; once in the first paragraph and, if vapour clauses are required, in the last paragraph. In applications for Determinations that a site is not a contaminated site, these clauses should simply refer to "Determination".
- Schedule C of the current template prefaces the list of substances for each media investigated with "To meet <not meet> numerical standards prescribed for defining whether a site is contaminated:". A number of recent Determinations include the following language which is incorrect: "To meet <not meet> numerical remediation standards prescribed for defining whether a site is contaminated:". Please use the Determination template to avoid this error.

Interpretation of Spill Reporting Requirements in the Context of Residential Underground Heating Oil Tanks

Background

The ministry originally received a request from an Approved Professional to clarify whether a spill report must be submitted when a leaking heating oil underground storage tank (UST) has been identified. Subsequently, the ministry was also asked to confirm whether the presence of a spill report on record would preclude the need for submission of a notice of independent remediation commencement.

Legal Context

The governing legislation includes the *Environmental Management Act* (EMA) and the Spill Reporting and Contaminated Sites Regulations (SRR and CSR respectively).

Analysis

Under the Spill Reporting Regulation (SRR), a spill is deemed to have occurred when a substance in an amount greater than the amount listed for that substance in the SRR is released or discharged into the environment.

"spill" means a release or discharge into the environment, not authorized under the Act, of a substance in an amount equal to or greater than the amount listed in Column 2 of the Schedule opposite that substance in Column 1. S. 1, SRR

Heating oil is considered a class 3 flammable liquid, the reportable spill volume for this class of substances is 100L. According to the regulation, a spill must be reported when a person who had possession, charge or control of the substance immediately before the spill becomes aware of the spill.

2 (1) For the purposes of section 79 (5) of the Environmental Management Act, a person who had possession, charge or control of a substance immediately before its spill shall immediately report the spill to PEP. SRR

(2) Where it appears to a person observing a spill that a report under subsection (1) has not been made, he or she shall make the report referred to in this section.

In the case of heating oil contamination in soil that has resulted from historical releases or discharges, a qualified professional or other person is not required to report the spill if:

1. They did not have possession, charge or control of the heating oil prior to its release to the environment, and did not observe the spill
2. If the amount released did not equal or exceed 100 liters or
3. The amount released exceeds 100 litres but is the result of historic or minor releases where the amount released in any year did not exceed 100 litres.

It is recommended that homeowners or qualified professionals, if unsure as to whether a release occurred when they had possession of the substance, report the spill, or if unsure of the amount of the spill report the spill.

Spills and Notifications of Independent Remediation (NIR)

Under the Contaminated Sites Regulation (CSR), notification of the director is required within 3 days after the commencement of independent remediation involving handling, management or treatment of contaminated soil, water, sediment or vapours, other than for purposes of investigation. Remediation is "independent" when it is conducted outside a ministry Approval in Principle, order or other legal instrument.

57 (1.2) A person who has a duty to provide notification to a director of commencement of independent remediation under section 54 (2) (a) of the Act must provide written notice to a director within 3 days after the commencement of any remediation activity involving handling, management or treatment of contamination, other than activity which has the purpose of obtaining results for investigation purposes... CSR

Where independent remediation is conducted as part of an emergency response to a spill, the person conducting the independent remediation is exempt from the requirement to notify the director of the commencement of remediation under 57 (1.2) provided the spill has been reported in accordance with the requirements of EMA and SRR.

57(2) In the case of independent remediation arising from emergency response to a spill of a polluting substance, a person is exempt from the requirements of subsection (1.2) if the spill has been reported

in accordance with the requirements of section 79 of the Act and the Spill Reporting Regulation. CSR

When independent remediation has been completed, whether under an emergency response or not, the person who conducted the independent remediation is required to notify the director in writing within 90 days of completing the remediation.

*54 (2) Any person undertaking independent remediation of a contaminated site must
(a) notify a director in writing promptly on initiating remediation, and
(b) notify the director in writing within 90 days of completing remediation. EMA*

Failure to provide the required notification may result in an offence under the Act.

*120 (17) A person who
(b) fails to notify a director of initiating or completing independent remediation under section 54(2)
commits an offence and is liable on conviction to a fine not exceeding \$200,000 or imprisonment for not more than 6 months, or both.*

Summary

In circumstances of soil and groundwater contamination originating from undetermined historic releases or discharges from a residential heating oil UST, a spill report is not required. Exceptions would be where the contamination is indistinguishable from recent releases or discharges of heating oil in an amount or amounts greater than 100L are confirmed.

A notification of independent remediation (NIR) must be submitted to the director within 3 days of commencement of remediation of any contaminated media except where remediation is being conducted as part of an emergency response to a reported spill. A notification of completion of independent remediation must be submitted to the director within 90 days of completion of the remediation, whether or not remediation arose from an emergency response to a reported spill.

Failure to provide notification is an offence under EMA.

WINTER 2015

CS e-link

Survey – Transition Period for CSR Stage 10 Amendments

The Ministry proposes to incorporate a transition period for the standards updated during the CSR Stage 10 Amendment. The purpose of this transition period is to provide a window of time for responsible persons to adjust their remediation plans to accommodate the changes in the updated standards.

If you have not already, please voice your opinion on how long the transition period should be by completing the survey found here: <https://www.surveymonkey.com/r/RZXXTRV>

Borehole Log Clarification

MoE requires a sample borehole log (with disclaimer as seen below) **and** a completed borehole log spreadsheet as standalone documents. Submissions not containing the 2 items will not be processed. The Submission Transmittal Letter has been revised to reflect this change and can be found in the Members section of the site here.

Appropriate disclaimer for the borehole log *“For environmental purposes only”*.

AG 11 Communications Summary

The Ministry now requires the source parcel owner responsible person to consider communications that have been received from an affected parcel owner after the formal 30 day response window, but before the submission has been made to CSAP.

Contaminated Sites Borehole Logs now on DataBC

Land Remediation Section is pleased to present our initial efforts to provide the public with information on drilled

borehole logs at select contaminated sites in BC. Information can be viewed in the government's DataBC online GIS application "iMapBC" (<https://arcmaps.gov.bc.ca/ess/sv/imapbc/>). To view the contaminated sites borehole log layer click on the "I want to" button and then "add DataBC layers". Search for Borehole Lithology Sites and click apply. Through this application the general public can obtain hydrogeological information at specific sites, such as borehole lithology by depth, total depth of the borehole and, if available, hydraulic conductivity values. Please note, the geological information provided from borehole logs has been summarized from reports submitted to the Ministry of Environment by third parties. It should not be relied upon for purposes other than to provide a general indication of subsurface conditions within geographic areas of interest. This hydrogeological inventory will help augment ongoing investigations of contaminated sites and support future mapping of geological information (such as geographic extent of natural confining barriers) that may offset investigation requirements for determining groundwater use at contaminated sites. In order to maintain this useful resource, the ministry requires at least one representative borehole log (as an electronic PDF document) for each site be provided with each application for a ministry instrument. A disclaimer may be added to the borehole log. An example is provided below. The Borehole Log Information excel spreadsheet under Technical Guidance 6 must be completed and submitted to the ministry to help us enter the pertinent borehole lithology information into our database.

Example disclaimer to be added to borehole logs submitted to the ministry: Any use which a third party makes of this document, or any reliance on or decisions to be made based on it, are the responsibility of such third parties. CSAP/MOE are not responsible for any use or modification of this document. CSAP/MOE accept no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this document.

If you have any questions related to the ministry's mapping of borehole lithology please contact Lavinia Zanini at Lavinia.Zanini@gov.bc.ca or Janet Barrett at Janet.Barrett@gov.bc.ca. The purpose of the Ministry of Environment's CS e-Link system is to identify legal, technical, policy and guidance information related to the management and administration of contaminated sites in British Columbia which may be of interest to subscribers. Mention of non-Ministry of Environment documents or presentations does not constitute ministry endorsement of their contents, only an acknowledgment that they exist and may be of interest to CS e-Link subscribers.

WINTER 2014

The Land Remediation Section at MOE would like to remind CSAP members to use the attached contact list to help identify the appropriate ministry staff member or program when you have a technical, regulatory or policy question:

http://www.env.gov.bc.ca/epd/remediation/pdf/contact_list2013.pdf

The Ministry of Environment has recently re-clarified the "Ministry Procedures for the Roster of Approved Professionals" that it is not acceptable under Table 1 items 3 and 5 (**Approved Professional Work and requirements for arm's length review**) for a numerical standards Approved Professional to self-review the numerical standards portion of a Protocol 6 submission (other than a screening level risk assessment) for a risk-based standards Approval in Principle or Certificate of Compliance. The arm's length review requirement applies whether or not the contamination extends off of the site.

If you have any questions or comments, please contact the ministry at site@gov.bc.ca.

Notice of Independent Remediation Clarification

The ministry was asked the following question: If risk assessment was conducted at a site, but no remediation or risk management was conducted, is the submission of a Notice of Independent Remediation (NIR) required?

The answer: No. Fact Sheet 21 states that "*The provincial Contaminated Sites Regulation under the Environmental Management Act (the Act) requires that a person provide written notice to the ministry within three days of the*

start of any remediation activity that involves handling, managing (including risk management), or treating contamination". Furthermore, the CSR defines risk management as "actions, including monitoring, designed to prevent or mitigate risks to human health or the environment caused by contamination at a site". Since risk assessment alone is not mentioned in Factsheet 21 or defined as risk management within the CSR, risk assessment alone is not considered remediation for the purposes of submitting a NIR, and a NIR is thus not required when risk assessment alone is carried out at a site.

Spring 2013

Ministry Clarification – Performance Verification Plan Requirements for Sites Remediated under the Risk assessment/Risk management Approach

The Ministry has clarified that under Procedure 12, Procedures for preparing and issuing contaminated sites legal instruments a Performance Verification Plan (PVP) must be provided for all Risk-Based Remediation Type 1B, 2 or 3 sites.

The ministry anticipates that since PVPs are site specific, these plans will vary in their: scope, complexity, specified monitoring actions/activities, performance verification inspection frequencies, type and extent of contingency actions and notification requirements.

For example performance verification at a Type 1B site having only intrinsic controls in place to manage risk may not require any associated inspection or contingency considerations. It is likely that an adequate PVP for a typical Type 1B site might comprise little more than a notification requirement to advise the Director if and when, an intrinsic control becomes compromised or ceases to function.

Conversely, the performance verification plan at a Type 3 site is likely to be more complex and detailed than that required for a Type 1B site. At a Type 3 site, depending on the potential consequences of the failure of institutional or engineering controls implemented to manage risk at the site, in addition to possible notification requirements, the PVP may also need to include detailed specification of the engineering works to be implemented, along with associated schedules for inspection of those works and other additional monitoring actions/activities pertinent to the site. Further, some Type 3 sites may require separate Operation and Maintenance Plans and/or Contingency Plans related not only to installed engineered works but also to the site as a whole.

The ministry is in the process of finalizing new instrument templates to accommodate the requirements of Procedure 12. These new templates should be made available soon. In the interim, Approved Professionals should continue to use the version of the instrument templates previously provided.

Specific Points of Clarification

A. Performance Verification Plans

A1. A Performance Verification Plan must be included for any site identified to be a Risk-Based Remediation Type 1B, 2 or 3 site.

A2. The details of a PVP must be developed on a site specific basis at the recommendation of an Approved Professional.

A3. The PVP should be developed by the risk assessor (e.g. risk assessment specialist) who conducted the risk assessment for the site with, where warranted, the cooperation/assistance of the individual who performed the site characterization (e.g. standards assessment specialist) for the site.

A5. A PVP must include a summary rationale detailing the reasons for the inclusion of all elements constituting

the PVP for the site.

A6. A PVP may, or may not, include specified monitoring actions/activities for risk management conditions or measures implemented at the site. A PVP may, or may not, include a schedule for the inspection, or any other aspect related to the verification of the performance of, required monitoring actions/activities, at the site.

A7. A PVP may, or may not, require the compilation and maintenance of records related to the inspection of, or any other aspect related to the verification of the performance of, required monitoring actions/activities at the site. If such records are required to be maintained, the PVP must identify the individual(s) responsible for maintaining such records (e.g. the responsible person(s) or their agent(s) for the site). A PVP must specify that if such records are required, the records must be made available to the Director either upon the request of the Director, or on a scheduled basis as specified in the PVP.

A8. A PVP may be subsequently modified over time based on the recommendation of an Approved Professional and at the discretion of the Director.

A9. The responsible person for the site bears ultimate responsibility for the execution of the PVP.

A10. PVPs are subject to the normal CSAP risk assessment Approved Professional "arm's length review" requirements (i.e. PVPs should be developed by the risk assessor conducting the risk assessment for the site and be subsequently independently reviewed by the Approved Professional).

A11. The ministry recognizes that detailed guidance for the development of Performance Verification Plans is lacking and has therefore recommended to the CSAP Society that PVPs be exempt from the Approved Professional Performance Assessment process for a period of at least 1 year to allow sufficient time for Risk Assessment Specialists to gain experience in the completion of PVPs.

A12. The ministry is working with the CSAP Society on a mechanism to make available to CSAP members and the broader environmental consulting community, for educational purposes, PVPs submitted through the Approved Professional process.

To facilitate the provision of PVPs for educational purposes, the ministry requires PVPs to be provided as a separate "standard alone" document distinct from the Summary of Site Condition, risk assessment, or other reports submitted in support of issuance of an instrument for a site.

B. Instruments

B1. The type of site (i.e. Type 1B, 2 or 3) as determined under Procedure 12 must be stated in both the PVP and any instrument prepared for the site.

B2. There is no a priori requirement under Procedure 12 to include in Schedule B maintenance of a specific land use (e.g. "Land use must remain commercial") as a principal risk management condition or measure.

B3. A risk management measure in Schedule B which acts to restrict the use of groundwater as drinking water (e.g. "Groundwater must not be used as drinking water") is considered to be an institutional control under Procedure 12.

B4. In specifying the principal risk management conditions and measures upon which the risk assessment is based in clause 2 of Schedule B, the risk assessor for the site should give careful consideration to the nature and significance of the risk associated with the risk management conditions and measures proposed for the site and only include in clause 2, those risk management conditions and measures which are critical and essential to the management of risk at the site.

B5. The ministry expects that any PVP prepared for a site will appropriately address the principal risk

management conditions and measures applicable to, or implemented for, the site. Further, the key elements of the PVP should be listed in clause 4 of Schedule B and, if required under the PVP, any requisite records of performance should be listed in clause 5 of Schedule B.

For more information contact the Environmental Management Branch at site@gov.bc.ca

Ministry review of water use decisions in AP applications

The ministry has recently been looking at water use decisions in AP applications with the purpose of acquiring data on areas where no DW use has been determined for inclusion in the ministry's water use database. The database has been developed to assist the ministry and broader public when assessing water uses on particular properties. Prior to entering sites in our database the ministry checked the SoSCs for supporting information. In many of the cases reviewed (including both instruments already issued and those now in the queue) the SoSCs provided in the AP application package did not contain adequate information to support the no DW use determination. In light of this finding the ministry wishes to advise AP reviewers of the following:

- In the case of new applications, where incomplete information is provided in a SoSC to support a no DW water use, the ministry is requesting submitting APs to provide the information upon which they relied before the ministry will issue the instrument. This could involve referencing information in the DSI or pulling the information together in a separate submission (see table below listing information found missing in SoSCs and requested by the ministry).
- The ministry will continue to review SoSCs in AP submissions where no DW water use is determined as part of our database acquisition process. Properly supported decisions will be added to the database. Those not properly supported will be followed up per above.
- It is recommended that APs provide all the information upon which they base their water use decisions in the SoSCs. There is currently no place in the form to do this but information can be provided in the sections on geology and hydrogeology (note: where relevant, contamination information could be included here as well with details elsewhere).
- The ministry is in the process of completing limited revisions to Technical Guidance 6 and hope to have the revised document available over the next few months along with an updated list of Q&As. The ministry will also be discussing proposed Technical Guidance 6 updates and common misunderstandings at the CSAP Annual General Meeting in June.
- APs are encouraged to contact Lavinia Zanini, Annette Mortensen or Amy Sloma if they have questions related to the determination of water use under TG6.

Information deficiencies found in SoSC's for sites where no DW water use was determined to apply are listed below.

Confining Units

- K values not provided.
- Source of K values not indicated. If not measured, supporting rationale for use at the site not provided.
- K values provided higher than 10⁻⁷ m/s, supporting rationale for concluding a confining unit is inadequate or not provided.
- Thickness of confining unit variable, average thickness not provided or unclear.
- Thickness less than 5 m over bedrock, supporting rationale for concluding a confining unit and not assessing bedrock is inadequate or not provided.
- Not indicated whether the unit is clean or if 5m of clean confining unit present.

Shallow Aquifers

- Average saturated thickness of the shallow aquifer not indicated or unclear.

- Saturated thickness variable/trending and greater up to 3 m in some areas, supporting rationale for concluding no shallow aquifer is inadequate or not provided.
- Average saturated thickness approx. 1 m, based on summer data only, no rationale for not considering seasonality.

Bedrock

- No overlying confining unit (or inadequate information provided) and no indication that overlying unit is clean as required to rule out bedrock as an aquifer.
- No K values provided for bedrock where bedrock can't be ruled out as aquifer.

Water Quality

- No TDS values presented to support unsuitable water quality determination.

Scenario 4 & 5 release requests under MOE's Administrative Guidance # 6 - reminder

Please be reminded that Scenario 4 and 5 releases under AG#6 that include a detailed risk assessment component must be signed by a CSAP Risk Assessment Specialist. Therefore 1 or 2 confirmation letters will be required to address the standards and/or risk assessment aspects of the proposed or completed remediation approaches.

WINTER 2013

New Documentation requirement for Risk- based CoC Schedule B

Risk Based Schedule B Conditions: The MoE is now requesting additional information from Approved Professionals in regards to Schedule B conditions on draft risk based instruments submitted via the Protocol 6 process. Risk APs are required to refer to the table below and identify whether their remediation type is a 1, 2 or 3 as defined in the table. They are also required to confirm that they have used the correct clauses for the remediation type identified.

If CSAP isn't able to identify the above statements included with the submission, the Risk AP will be required by CSAP to confirm the above in writing (e.g. an email confirming what remediation type best describes their site and that the correct conditions have been applied per the MoE table below). That confirmation will be provided to the MoE with the package when forwarded by CSAP.

CSAP notes that if you are not certain which remediation type and conditions apply, you are to contact the MoE for additional clarification before sending your application into CSAP. The MoE has indicated the submission will be returned to CSAP unless the required statements are provided.

Risk assessment conditions and risk management measures by type (Appendix 3 to Draft Procedure 12, Procedures for preparing and issuing contaminated sites legal instruments)

Clarification on MoE Procedures for the Roster of Approved Professionals, specifically Table 1.

The MoE has recently confirmed that an “Approved Professional making a risk-based standards Certificate of Compliance recommendation may rely on a numerical standards Approved Professional’s recommendation that a DSI is complete, made without an arm’s length review.

In other words, row 5 of Table 1, “Approved Professional Work and requirements for an arm’s length review” in the document “Ministry Procedures for the Roster of Approved Professionals” does not supersede row 14. Row 5 applies only to the work involving risk assessments and remediation to risk-based standards, not to site investigations and the site investigation reports upon which the risk assessments and remediation are based. This applies whether or not contaminant migration to neighbouring parcels is involved.

Determination documentation reminder

The listing of the substances, particularly organic chemicals, in Determinations has been problematic for the MOE when reviewing instruments submitted to them. This can often be complicated due to the fact that not all of the analytical laboratories list substances in the same manner (i.e. PCE or tetrachloroethylene or PERC may appear on the laboratory certificates and are simply different naming conventions for the same substance). Members, when reviewing these naming conventions, must carefully review the laboratory certificates to insure that substances are either not missed or that they are not included multiple times.

Members are reminded when completing Schedule C of the instrument that substances for each media are to be listed on the instrument by the Schedule they appear in in the CSR, followed by substance class as they appear in the Schedules followed by their name as they appear alphabetically within each substance class. List for each media only those substances identified in

Schedules 4, 5, 6, 9, 10 and 11 and ensure that each substance has a standard for the applicable land/water use (i.e. some substances in soils may only have applicable land use for agricultural). Also, the spelling of the substance should be identical to that in the Regulation. For further direction we recommend you view issued Determination.

NOVEMBER 2012

1. SoSC reports for multiple instrument application in a single submission.

The MoE has recently confirmed for CSAP that the following is their current policy. If there are multiple instruments being requested, based on a single set of reports, then each submission will require a separate SoSC report, but only a single fee of \$2,000 plus GST will be required by the Ministry to review all of the SoSCs. Previously other alternatives had been allowed by the MoE but the above reflects their current position.

2. Scenario 4 and 5 release requests under MOE’s Administrative Guidance Document #6

Please be reminded that Scenario 4 and 5 releases under AG#6 that include a detailed risk assessment component must be signed by a CSAP Risk Assessment Specialist. Therefore 1 or 2 confirmation letters will be required to address the standards and/or risk assessment aspects of the proposed or completed remediation approaches.

SUMMER 2012

PAC lessons learned (Dave Newton, Chair)

CSAP lessons learned . The PA Committee would like to bring the following items to your attention. The following have come to our attention during performance assessments, during submission screening at CSAP, and via interactions with the MoE:

When preparing a Stage 2 PSI or DSI and when you are of the opinion that the IW, LW and/or DW standards do not apply, please be sure to discuss your rationale in the context of the steps laid out in Technical Guidance 6. For example, there are several questions that require consideration when ruling out DW. A complete discussion referencing each of the steps (e.g. Questions 1 to 4) in TG6, will likely increase the likelihood that the conclusion will be correct.

When evaluating which attenuation factor to apply when using soil vapour data to estimate indoor and/or outdoor air concentrations, we remind APs to refer to footnote 2, of Table 2 of TG4. Specifically, the selection of an attenuation factor is controlled by the depth to the bottom of the bentonite seal, and not necessarily the depth to the top of the screen.

The MoE has recently reconfirmed it is not acceptable to process a Protocol 6 submission, without full off site delineation of site caused contamination to numerical standards, even if the contaminated areas are at acceptable levels when evaluated in a risk assessment. Risk assessment is a method of remediation, not delineation.

When performing a vapour assessment for substances with measured concentrations in soil vapour, soil and groundwater, valid supporting rationale should be provided for selecting measurements in one medium over another as being more representative.

If a chemical is considered to meet a CSR Schedule 11 vapour standard using an attenuation factor that is not specified in Table 2 of Technical Guidance 4, this chemical should be considered to be remediated to risk-based standards. Accordingly, such chemicals in soil vapour need to be delineated and listed in Schedule C as remediated to risk-based standards. These chemicals need to be brought forward in the problem formulation addressed through the risk assessment.

The MoE has also reconfirmed that there is no obligation to submit a notice of independent remediation if the chosen remedial strategy is entirely risk assessment.

At the June 6, 2012 AGM the MoE spoke on several subjects including the responsibilities of APs. The MoE presentations are posted on the CSAP web page. For those not present at the AGM, we suggest you find time to consider that presentation. Amongst other things, it provides a good reminder to APs to reread the CSAP Practice Guidelines on occasion.