

Summary of Consultation Comments

Organic Matter Recycling Regulation (OMRR): Intentions Paper

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Section A: Background to the Consultation Process and Responses Received

Introduction and Background to the Consultation Process

This report provides a summary of consultation comments received as part of the consultation process for revision of the Organic Matter Recycling Regulation (OMRR) under provisions of the *Environmental Management Act* (EMA) and the Waste Discharge Regulation (WDR). The EMA and WDR were brought into force in July 2004. Under the legislation, introductions of waste from identified prescribed industries, trades, businesses, operations and activities require authorization (e.g., permit or approval) from the ministry. The OMRR governs the construction and operation of composting facilities, and the production, distribution, storage, sale and use or land application of biosolids and compost. The review process and proposed revisions follow direction in the regulation for the ministry to “evaluate the management of the regulation within three years of [it] coming into force to determine if any modifications are appropriate.”

An intentions paper and response form were posted for public review and comment on the ministry’s website (<http://www.env.gov.bc.ca/epd/codes/>) from October to December 2006. The intentions paper provided a summary of the ministry’s mandate and objectives, background information summarizing the provisions of the OMRR, proposed revisions to the regulation, information on the development of best management practices and assuring compliance. The response form set out discussion issues and questions in relation to the ministry’s intentions.

This document has been prepared for the Ministry of Environment by C. Rankin & Associates, contracted by the ministry to independently receive, compile and review comment on the proposed revisions to the regulation. The summary does not reflect the ministry’s position on any issue. It provides a synopsis of the responses that are being reviewed by the Ministry in considering revisions to the regulation – without specific attribution, except to the extent required to provide context for the comments. The summary follows the headings and questions contained in the ministry intentions paper and response form – with synoptic and detailed sections, as well as general, process related and supplementary comments from respondents. Appendix 1 lists acronyms and abbreviations commonly used in submissions and this summary document.

Appendix 2 summarizes a detailed response received following close of the comment period.

All detailed comments have not been included in this document – but have been compiled as part of the comprehensive documentation of responses being reviewed by the ministry. All comments and references submitted through this process, through independent submissions and through direct consultations with stakeholders, will be reviewed and carefully considered by the ministry in reviewing and revising the regulation.

Description of Responses Received

Over thirty separate responses were received (by e-mail, fax and attached file) by the end of December 2006 and have been reviewed for this summary of consultation comments. About half of the respondents identified themselves as involved in the organic matter recycling industry (either as operators or specialist consultants). Other respondents included representatives of provincial ministries, regional and local governments, and First Nations. Responses received from First Nations noted process and information points and did not contain substantive comment on the content of the intentions paper.

Many of the responses included specific and detailed comment and recommendations for the ministry to consider. This summary of consultation comments attempts to capture the tenor and content of comments through summarization and specific excerpts from representative submissions.

Section B: Comments on Discussion Issues

This section contains a detailed summary of responses to questions posed in the response form. This summary reflects the range of comments received, as well as excerpts of individual submissions with specific advice or recommendations. Direct excerpts from submissions are included in quotation marks (“ ”) and square brackets ([]) indicate inferred or contextual terms. The complete set of responses and submissions received through the consultation process has also been compiled and passed to the ministry for detailed review and consideration.

Discussion Issue 1: Organic matter suitable for composting

The Organic Matter Recycling Regulation (OMRR) sets out a list of organic matter suitable for composting and management under the regulation (schedule 12). Other organic matter may be appropriate for inclusion and regulation. The ministry is seeking comment regarding potential definition and inclusion of additional organic materials, discussed in the intentions paper under seven categories.

Question 1.1: Do you believe that primary or secondary pulp or paper mill wastewater treatment residuals should be included as “organic material suitable for composting” under the OMRR?

About two thirds of respondents who commented on this topic supported inclusion of these materials under the OMRR. Those in favour of inclusion commonly cited “harmonization of regulations” (e.g., with the proposed Soil Amendment Code of Practice), or potential appropriate use of composted pulp or paper mill residuals as a “blend stock for biosolids” in the formulation of land application products, as a rationale for their comment. Respondents who did not feel that the materials are appropriate for inclusion in the regulation expressed concern that the residuals may contain contaminants (e.g., dioxins, furans) that would not be appropriate for composting and subsequent application of the composted material due to their persistence in the environment.

Specific comments included:

- “Need to ensure that chemical characteristics are appropriate, the material is free of any entrained chemicals from the pulping or bleaching process as well as any other contaminants that may be of concern”;
- “Should be for Class B composts only and pulp processing contaminants be identified and monitored”;
- “The pulp and paper residuals should be handled by the industry, and... the regulation should target the producers. [As] an operator who processes organic material, it would be uncertain whether there are any residual chemicals following the primary treatment (that would have the potential to bioaccumulate in the compost produced)”;
- “The bacterial component to some mixed effluent treatment residuals from BC mills will give false ‘positive’ indications of fecal coliform counts. This will be an issue with the pathogen reduction process. It is recommended that site specific consideration to this process be given. Alternatively, specific pathogen indicators could be used to demonstrate that the materials have low health impacts”; and
- “It is an industrial residual and should fall under the ‘wastewater’ standard. At no time should any end product be allowed on the market.”

Question 1.2: Do you believe that material currently defined as “yard waste” and “untreated and unprocessed wood residuals”, as well as other clean wood material should be addressed under a single category (i.e., “clean wood”) defined in the OMRR?

About two thirds of respondents who commented on this topic supported inclusion of these materials under the OMRR. The bulk of written comments, however, included substantive discussion and advice regarding definitions and difficulties in determining whether wood material can be determined to be “clean.” One respondent noted, for example, that “if wood with environmentally-friendly preservatives is accepted, it [may] be difficult to screen it... from wood with unacceptable preservatives.” Several respondents commented on the differences between “yard waste” and “wood residuals” – with some pointing out the potential for yard wastes to be contaminated with herbicides or pesticides, and others the potential for wood material to be contaminated (e.g., “demolition wood is never clean”). A number of respondents recommended that the regulation should provide separate categories for yard and garden waste, land clearing waste and wood residuals related to wood processing. A respondent from a Regional District further recommended that “post-consumer wood products and wood products from construction and demolition activities” should not be included in the list of materials suitable for composting, citing difficulties in sorting “clean” and “contaminated” materials, and costs of testing to ensure that residuals associated with potentially contaminated materials are not present after composting.

Specific comments included:

- “Yard waste can be generated from plants attacked or infected by regulated (Canadian Food Inspection Agency or BCMAL) insects and diseases. Consider a category to address this material, which would require special handling. Also consider special handling for any noxious weeds removed during clean-up work”;
- “Mixing Yard and Garden Waste (municipal solid waste) with Clean Wood (various sources including industrial) will muddy the jurisdictional issues. Regional Districts and other local government have responsibility for MSW but not industrial wastes”;
- “Should include land clearing wood waste, this material presents a significant waste volume which could be reduced if composted”;
- “It would be preferable to retain separate definitions for ‘Yard and Garden Waste’ (municipal solid waste) and ‘Clean Wood’ (various sources including industrial), respecting their differing characteristics, their potential for contamination, and the possible need for differing levels of quality control checks on the waste streams”;
- “It is not practicable for the composting industry to sort and segregate the myriad of wood product types into acceptable and unacceptable streams”;
- “The definition of clean wood should include a list of treatments which would prevent the wood from being classified as clean, e.g., painting, preservation, presence of nails...”; and
- “It is also important to consider the effects to public confidence in the safety of composted products if the list of feedstocks is expanded to include wastes known to contain contaminants of concern to the environment and to human health.”

Question 1.3: Do you believe that unstabilized domestic sewage sludge should be included as “organic matter suitable for composting” under the OMRR?

Respondents who commented on this topic were almost equally divided in support for, or opposition to, inclusion of this material in the OMRR. Those who commented in support of inclusion noted that “as long as it meets all the quality criteria for metals and pathogen destruction... it makes no sense not to include sewage sludge [with appropriate] requirements that there be sufficient pathogen and vector control to produce Class A finished compost.” Respondents who did not favour inclusion of this material under provisions of the OMRR cited concerns with odour, handling of liquid feedstocks, leachate management,

and contamination of the waste stream from domestic and/or industrial sources.

Question 1.4: Do you believe that animal carcasses should be included as “organic matter suitable for composting” under the OMRR?

Most respondents who commented on this topic supported inclusion of this material in the regulation. Many respondents also commented that any inclusion of animal carcasses as material suitable for composting under the regulation should be accompanied by specific provisions in the regulation, with “primary consideration... given to avoiding the spread of disease” through conditions such as controlling input storage and vector control, monitoring criteria, ensuring that “gaps in CFIA regulations [for handling of specified risk material]... are covered”, and ensured that “rigid rules [for handling and processing of large carcasses] are followed.” Respondents who expressed concern noted the much higher risk introduced when composting animal carcasses, the difficulties in quality assurance of the final product, pest control and “concerns from both public health and public perception perspectives.”

Question 1.5: Do you believe that paper and cardboard should be included as “organic matter suitable for composting” under the OMRR?

Almost all respondents who commented on this topic supported inclusion of this material in the regulation. Several respondents recommended that recycling should be the priority use for paper products – for example, “clean paper and cardboard should be directed to recycling and should be prohibited from use in composting.” Respondents also expressed concern that materials contaminated with oils, greases or paints (or other materials) not be composted. Several respondents noted that “paper and cardboard materials ‘contaminated’ with food waste are suitable for composting.”

Question 1.6: Do you believe that the director should have authority under the OMRR to specify additional organic matter as suitable for composting” under the regulation?

Almost all respondents who commented on this topic supported the inclusion of this provision in the regulation. One respondent noted that “the director should have discretionary authority – regulations cannot anticipate all possibilities and, due to time lags in updating regulations, may not be responsive to emerging issues or new technologies and approaches.” Recommended caveats on this “discretionary authority” included: “exercise [the authority] on the basis of sound research and application of appropriate standards, conditions, and requirements”; “require a thorough assessment by a qualified professional... review by the Ministries of Environment, Health and Agriculture..., environmental controls..., local government referral and First Nations consultation” and “[following] sufficient research into standards [and] conditions of use.” One respondent recommended establishment of an advisory committee “knowledgeable in the area of composting” to provide advice to the director on matters such as the inclusion of additional matter as suitable for composting under the regulation.

Discussion Issue 2: Updates based on science

The OMRR contains a number of schedules that set out technical standards and requirements for recycling organic matter. The ministry intends to update these schedules to ensure consistency and currency with the Standards Council of Canada National Standard for Organic Soil Conditioners, Canadian Council of Ministers of the Environment (CCME) Guidelines for Compost Quality, Federal *Fertilizer Act* and Regulations (including standards for metals in fertilizers and supplements), and *Environmental Management Act* Contaminated Sites Regulation.

Question 2.1: Do you have any comments or suggestions regarding updates to the OMRR to maintain consistency with the standards and guidelines described in the intentions paper?

Respondents provided a number of specific suggestions for the ministry to consider in revising the OMRR. Several commented on the need to maintain consistency with the federal fertilizer program (legislation, as well as guidance from the Canadian Food Inspection Agency), Best Management Practices Guidelines, neighbouring jurisdictions (including Washington, Idaho, Montana and Alberta), and other acts and regulations applicable to the composting industry.

Specific comments included:

- “Testing should be consistent with US EPA-6010B method for Compost/Manure-Minerals”;
- “We need standards that are more regional to reflect the fact that many areas of the province have naturally occurring background levels of some metals such as chromium, nickel and selenium higher than the limit specified in the OMRR (especially for agricultural soils). The OMRR adopted the CSR soil trace element standards but does not have the ‘background release’ mechanism that is built into the CSR”;
- “Update as information on pathogen reduction processes for new key plant pathogens, and lethal temperatures for key invasive plant seeds becomes available”;
- “Define ‘organics’ properly – yard waste and sewer sludge have organic matter in them but they are also very high in heavy metals, chemicals etc.”;
- “The schedules should be referenced in the legislation in a manner that allows them to be updated as standards change, without requiring regulatory change to the OMRR”; and
- “The standards should be province wide, not subject to local Gov't differences.”

Question 2.2: Do you know of any other relevant standards or guidelines that the ministry should consider in reviewing and updating the OMRR? What particular aspects do you believe would strengthen the regulation?

Several respondents commented that “while Canada does not presently have mandatory requirements for ‘organic’ compost [i.e., suitable for organic farming], these could be developed and considered for inclusion in the OMRR.” Respondents recommended review of standards in nearby jurisdictions, and consideration of “good information coming from the Alberta Research Council”, following “California’s program [for]... heavy metals” and ensuring that provisions are complementary to those of the Canadian Food Inspection Agency. Comments from respondents with specific technical recommendations included: “review of metals limits...and provision for exclusion of outlier data in multiple samples”; “once pathogen reduction requirements have been established, it should be [permissible] for facilities to move compost to an alternative site for curing purposes”; “stability should include ‘Solvita’ type tests as an alternative”; and “fecal coliform requirements should be changed to E-coli as an alternative.”

Discussion Issue 3: Requirements for composting facilities

The OMRR requires an environmental impact study and report for composting facilities with annual production capacity of 20 000 tonnes or more. Plans and specifications are also required for the construction and operation of a new composting facility, or any modification of an existing composting facility that results in an increase in the “annual production capacity” of more than 10 percent or 20 000 cubic metres. Specification of the “design capacity” of the composting facility is also required to enable consideration of potential future environmental impacts that may be associated with the intended scale of the facility. The ministry is considering a number of questions related to these “triggers” and units of measure.

A. Triggers and measures for requiring an environmental impact study or preparation of plans and specifications

Question 3.1: What units would be appropriate to specify “annual production capacity” and “design capacity” (cubic metres or tonnes of incoming organic matter or outgoing compost production, or another measure)?

The majority of respondents who commented on this question recommended tonnes or cubic metres of incoming organic matter as an appropriate measure. Respondents who recommended using cubic metres cited such reasons as: “the end market is almost always sold in cubic [units]”; “using tonnage for design capacity or production volume is much more difficult to quantify”; and “cubic metres is more constant than tonnes because of degrees of wetness/liquid content.” Those who recommended input tonne made comments such as: “probably the most easily dealt with since material is sealed on arrival at most plants”; “easier to get accurate measurements”; and “weight based measurement of incoming organic matter is unambiguous and consistent.”

Other respondents, in contrast, suggested that annual production capacity should be stated in tonnes of outgoing compost production (in wet weight) as the “preferred” measure. Other comments made by respondents included: “units should be relative to available land surface area”; “there should be no unit – all sites regardless of size should fall under the regulations”; and “composting reduces volumes, so input end has to be capable of handling volume of material (units of measure [are] generally yards or tonnes in and cubic yards or metres out).”

Question 3.2: Do you believe that any of the trigger levels (i.e., for preparation of an environmental impact study or plans and specifications) be revised? If so, what revisions would you recommend to the ministry?

Many respondents commented that the trigger levels be increased to 25% (from 10%) with the rationale that “fluctuations in feedstock could easily change by more than 10%, especially for a growing facility.” Other respondents commented that existing trigger levels should be retained or deleted, as “some very small operations have created significant odour and water contamination problems”, or “all facilities should be required to provide an environmental impact study... operators who feel they cannot afford to participate should stop composting.”

Additional specific comments made by respondents included

- “Suggest consideration of site specific requirements or sensitivities that may trigger an impact assessment, allowing Director's discretion, depending on the nature of materials being composted”;
- “An EIS is intended to ensure protection of the environment. While the EIS requirement is introduced in Section 23, the link between doing an EIS and protection of the environment is not explicitly made in the text until Section 26 (4)”;
- “Alberta requires composting operations less than 20,000 tonnes per year to register and comply with a Code of Practice specifying requirements for Design and Construction, Operating, Monitoring, Compost Quality and Reporting. In Alberta, compost facilities that accept greater than 20,000 tonnes require an Approval. A similar regulatory Code of Practice for Compost Facilities could be developed and included in OMRR”;
- “A trigger level may be appropriate for a nursery or farming operation which is only composting material produced on-site (i.e., no processing of material from an off-site source) and that is used on-site”;
- “OMRR or MOE Administration Procedures should require the manager to review the EIS and plans and specifications and issue an approval of some sort. A facility should not be allowed to

operate until the approval has been received. Alternatively, the facility should be required to comply with a Code of Practice and be subject to appropriate penalties for failure to do so”;

- “Currently, the presentation of Compost Facility and Compost Product requirements in OMRR is dispersed throughout the regulation and Schedules. This makes it difficult to read and understand. A Code of Practice for Compost Facilities with all requirements in one section or an appendix may be easier to work with”; and
- “An EIS and plans and specifications should be required for any composting facility which is receiving organic material from others, for example, on a commercial basis. A trigger level may be appropriate for a nursery or farming operation which is only composting material produced on-site (i.e. no processing of material from an off-site source) and that is used on-site.”

Ministry Note:

The ministry intends to delete Section 23, which requires composting facilities to have an environmental impact study conducted by a qualified professional and to submit an environmental impact report to the ministry. Eliminating this requirement simplifies OMRR administration, compliance and enforcement activities. The objectives of Section 23 requirements can be adequately addressed by Section 24.

The ministry intends to amend Section 24 to require plans and specifications be prepared for all composting facilities including existing and new composting facilities – trigger levels for existing facilities will no longer exist. The ministry also intends to require that plans and specifications protect human health and the environment and do not cause pollution.

Plans and specifications are currently not required for composting facilities that existed at the time OMRR was proclaimed (February 2002) and that have not expanded annual production capacity more than 10% or more than 20,000 cubic meters. This results in different requirements for different composting facilities and challenges for OMRR administration, compliance and enforcement activities.

Question 3.3: Do you recommend that trigger levels (i.e., for preparation of an environmental impact study or plans and specifications) be deleted, thereby requiring an environmental impact study and plans and specifications for all composting facilities?

Most respondents recommended that the triggers be deleted so that “all compost facilities [will be] required to comply with the requirements in the regulation.” Several respondents noted that “even small operations have the potential to cause significant environmental and nuisance (odour) impacts.” One respondent noted that “the scope of the environmental impact study should be appropriate scale for the type and size of facility so as not to be onerous for smaller or lower risk operations.” Respondents who recommended retention of trigger levels commonly suggested that the ministry provide guidelines that should be followed for “smaller” operations (e.g., facilities composting less than 5 m³ per day).

Question 3.4: Should plans and specifications be required for proposed changes in the organic matter composted (e.g., addition of food waste and/or animal carcasses) or in the processing technology (e.g., to in-vessel) at a composting facility?

Respondents who commented on this question almost universally supported the provision. Specific comments included:

- “Yes. Pathogen levels vary significantly with feedstock. A facility should not be able to design for one feedstock, then quickly be able to add animal by products without being reviewed”;
- “Different material requires different handling [e.g.,] – plastic in food wastes excess moisture in some material”; and

- “Yes – especially for higher risk inputs and in-vessel processing which seems to produce the most odour problems.”

Question 3.5: Should the director have the authority to specify additional requirements for composting facilities including public consultation, environmental impact study, plans and specifications, and specified elements (such as odour and leachate management), if the director deems such requirements appropriate?

Respondents who commented on this question almost universally supported the provision. Specific comments included:

- “Yes. Even if there is little or no environmental impact, the public may need to be consulted to inform them. Failure may increase rumours of high impacts”;
- “Yes. Siting of compost facilities is difficult... it is important to have a very rigorous process for siting and approval of any proposed composting facility”;
- “Yes, in conjunction with local government.”

B. Plans and specifications

The ministry is reviewing requirements for plans and specifications within the OMRR to ensure that they effectively address general and site-specific objectives for protection of the environment and human health.

Question 3.6: Do you have any comments or suggestions regarding revision of odour management requirements to address source control, siting and monitoring, process management and odour control measures?

Many respondents noted that odour management is one of the most persistent problems and “can prevent composting from becoming a viable option for managing organic waste materials.” Several commented that “odour modeling [as well as other aspects of odour control and monitoring] is difficult.” Recommendations for dealing with the issue included: “standard protocols [that have been] established for odour complaints from agricultural and composting operations”; use of qualified professionals to develop odour management plans, monitor activities and manage complaints; working with local government (to identify and address potential odour concerns); and requiring a proponent [for any proposal other than yard waste composting] “to provide references from regulators of similar facilities in other jurisdictions.” A respondent noted that “site location and buffer zones are crucial for minimizing impact from odour – even the best run facilities will generate ‘significant’ odour from time to time...most industrial parks are generally not good locations for compost operations because of the inevitable odour events that will occur.” Another recommended that “all compost sites should prove to OMRR that they have an ample supply of carbon or finished compost on hand at all time to be used as a cover to address [odour] – odour-cover works wonders on odour.”

Question 3.7: Do you recommend that the ministry require mandatory buffers around composting facilities? If so, how large should these buffers be and how should they be managed or maintained? If not, what are the reasons for your recommendation?

Most respondents supported the concept of mandatory buffers around composting facilities and several suggested that any requirements should be “similar to what is required for a landfill operation” or “consistent with other regulatory requirements (e.g., *Water Act*, *Health Act*).” While some respondents recommended specific minimum buffer distances (e.g., 100 m or 500 m), a number noted that the design of effective buffers involves many site-specific considerations and should be “addressed by a qualified pro-

professional on a case-by-case basis.” One respondent recommended reviewing the *Alberta Agricultural Operation Practice Act* governing concentrated feed operations for livestock. The Act establishes minimum distance separation (MDS) values for operations to be separated from “stakeholders.” Respondents also noted that the type of buffer (e.g., trees, berms), as well as distance and wind patterns, can influence its effectiveness in controlling odours. In summary, one respondent commented that “the way to deal with odor and wildlife concerns is to locate all facilities far away from towns or populated areas – mixing, turning etc. produces an odor regardless of the inputs so distance is the best available buffer.”

Question 3.8: Do you have any comments or suggestions regarding potential requirements for additional plans to address wildlife, vector, litter and/or dust management considerations?

While some respondents who commented on this question supported requiring plans to address these issues (e.g., “better prepared than caught unaware”), others recommended relying on a qualified professional to determine the need for plans to address specified issues “on a case-by-case basis.” Several respondents suggested specific measures to manage particular issues, such as chipping of material to control “invasive insect or disease species”, or fencing and enclosing facilities to address wildlife and vector control.

Question 3.9: Do you believe that the regulation should require that dischargers prevent wildlife (including bears and eagles) from accessing “attractants” (i.e., organic matter, compost and/or garbage) at the composting facility (e.g., by enclosing attractants within an electric bear-proof fence or other bear-proof barrier)?

Respondents were divided in their responses to this question. Some respondents were explicit in commenting that “yes, any unprocessed organic material [should] be enclosed and inaccessible to wildlife.” Other respondents felt that “this will be extremely difficult to ensure/enforce”, that (for example) “bear fencing... should be required only if there is a documented problem with wildlife at the facility” and “blanket requirements may not be necessary or appropriate.” Respondents also described a number of specific management techniques that could be used to prevent wildlife from accessing a composting facility, including location (“far from town”), in vessel composting, ensuring that open windrow sites are not left unattended, “consistent harassment” to deter scavenging birds.

C. Leachate management for composting facilities

Effective leachate management is essential for composting facilities to ensure protection of human health and the environment. OMRR requires an impermeable surface, roof, cover, prepared surface and leachate collection system, and specifies that leachate must not be discharged into the environment unless authorized under the *Environmental Management Act*. However, such a cover or leachate collection system is not required, and leachate can be discharged into the environment, if a qualified professional can demonstrate through an environmental impact study that the environment will be protected and appropriate water quality criteria satisfied through the use of alternative leachate management processes. The ministry is reviewing a number of options for requirements in the OMRR that address leachate management.

Question 3.10: Do you believe that the regulation should prohibit leachate discharge to the environment – in all situations, or specifically in areas of high precipitation?

Respondents who commented on this question most commonly recommended that “leachate discharge should be regulated under the Act in the same manner and using the same criteria as the discharge of effluent from an industrial operation.” Several respondents emphasized the importance of a leachate control plan and monitoring of ground water quality, using “the qualified professional approach” in managing leachate discharge to ensure that environmental and human health risks are addressed. Respondent com-

ments included: “leachate discharge is a consideration for all areas – wet material is just as big an issue in dry areas as wet ones”; and “having zero tolerance is easy to say but harder to implement.”

Respondents who supported a prohibition of leachate discharge to the environment commented that “the regulation should prohibit leachate discharge in all instances – if a treatment system is in place, discharge of treated effluent could be accepted, provided there is no impact to water quality criteria” and “regardless of rainfall, organic material has the potential to generate substantial leachate.”

Question 3.11: Do you recommend that the ministry require an impermeable surface, roof, cover, prepared surface and leachate collection system – in all circumstances, or only in areas of high precipitation?

A range of comments were received in response to this question. Some respondents felt that “impermeable hard surface should be required for all facilities as part of leachate control” and that a cover “may [also]... be necessary in areas of high precipitation.” Other respondents emphasized the need for flexibility in defining an impermeable surface and site-specific considerations, and the importance of specific leachate management measures and active monitoring for leachate parameters of concern. One commented that “our site sits on 35 feet of woodwaste, gravel, etc. – an excellent absorption layer...[and] cementing or paving on top of this... would produce a serious environmental problem.” A common thread in many comments was that “the requirement should be based on control of leachate – many different situations require flexibility.”

Some respondents also commented on specifying materials when delineating an “impermeable surface” in the regulation. One noted that “the current regulations state that the curing area should be located on ‘asphalt, concrete or another similar impermeable surface’ – [the term] ‘impermeable surface’ should be defined and examples or physical parameters provided (e.g., hydraulic conductivity values).” Another respondent commented that “pavement is a poor management tool.”

Question 3.12: Do you recommend that provisions for undertaking an environmental impact assessment be revised or removed (thereby exempting a facility from sections 26(2) and 26(3) leachate management requirements)? Why or why not?

Most respondents who commented on this question recommended retention of these provisions in the regulation. Reasons for this included: “better to err on the cautionary side”; “the regulation’s environmental impact assessment requirements are sufficient as currently written”; “composting operations should be treated the same as any other industrial operation”; and “it is a more reasonable cost effective way to deal with and address a specific perceived issue than the more onerous and comprehensive environmental impact study.”

One respondent who recommended removal of these provisions commented that “requirements should either be complied with, or exempted if appropriate following technical evaluation and regulatory approval.” Another who recommended removal suggested that “if [the provision] is not removed, have a roster of qualified professionals who can carry out the EIAs.”

Question 3.13: Do you believe that a facility operator should be required to submit an environmental impact assessment report to the director before leachate discharge occurs? Why or why not?

Most respondents who commented on this question felt that this provision would be worthwhile “to demonstrate that the operator understands...how to mitigate any potentially negative impacts on the environment” and to “ensure accountability.” Respondents commented that: “again [this] is difficult to imple-

ment”; the provision should “require a report by a qualified professional”; and “some update may be required to the environmental impact assessment once leachate generation occurs and the leachate quality is characterized.”

Some respondents commented that a report may not be necessary in all situations. One noted that “if [leachate is] treated on site to an acceptable standard based on receiving site then an EIA [should not be required].” Another commented that “[the need for a report would] depend upon the site or facility design and if leachate management has been addressed at that time.”

D. Notification of operation

The OMRR requires the discharger to give notice in writing to the director and the Land Reserve Commission (if the composting facility is in an agricultural or forest land reserve) at least 90 days before beginning operation, with information concerning the facility and a “personnel training program plan” related to operating the facility in compliance with the regulation.

Question 3.14: Do you believe that all facilities, or only a defined portion of facilities, should be required to provide notification?

Almost all respondents who commented on this question felt that “all commercial operations should be required to give notice.” One respondent noted that “ALC regulations require notification only if more than 50% of compost is exported off farm – OMRR should be consistent.” Another noted that the proposed requirement for a personnel training program plan “may be an opportunity to follow other jurisdictions with certification and training requirements for compost operators, much like wastewater treatment plant operators.”

Question 3.15: Do you have any comments or suggestions regarding the nature of the information that should be required with notification?

Information to be included in notification commonly suggested by respondents included: location; name and contact information of the owner and operator; confirmation of approval by local government; source and characteristics of feedstock; quantity to be processed annually; type of process used; specifications and size of operation (and maximum feedstock to be received on a daily basis); expected market for finished product; copies of any required (e.g., EIS, odour management, leachate management) plans; and monitoring and reporting requirements [and plan/commitment]. Additional suggestions included: public input; financial viability; “ability and knowledge to carry out plans”; wildlife consultation; and type of compost. One respondent commented that “the item most often missed is the sizing of the site to handle the volumes and the six or more months that the material will be on site multiplied by the daily volume – this may be a much larger area than ever expected and is proving in some cases to be a major problem.” Another respondent commented that “perhaps notification of the intent to complete an EIA would be better – to [enable MOE to] work with the land owner/company in the siting and operation.”

E. Capacity of composting facilities

The current regulation specifies that at least half of the compost stored at a facility must be removed annually. The ministry is proposing to revise this requirement to specify that such material must be used as compost, and not simply moved and stored at another location

Question 3.16: Do you have any comments or suggestions that should be addressed within OMRR regarding the storage and use of compost stored at a facility?

A number of respondents commented that the requirement for removal and use within a specified time

period may not be appropriate in all cases, for example: “our present turnover times for our exclusively fish waste composting operation is ...2 to 2½ years”; I believe the timeframe could [be longer]... when a new facility is first established to allow the operator to fine tune the process and to achieve a consistent product”; and “should allow exceptions, for example landfill owners/operators may want to stockpile compost to use for landfill closure.” One respondent questioned the need for the provision: “moving compost that has met the pathogen reduction phase to another location does not seem like it should be a major issue.” Several respondents also commented that heavily contaminated stored material is not suitable for compost, and hence would have to be landfilled or incinerated (and should be permitted as such).

Discussion Issue 4: Requirements for production of “biosolids growing medium”

The requirements for “biosolids growing medium,” including process and quality criteria and distribution requirements, are set out in the regulation. These provisions may not be relevant to current practices and standards. The ministry is seeking comment on whether the regulation should be revised.

Question 4.1: Should the process and quality criteria and distribution requirements for biosolids growing medium be revised for consistency with current practices and standards? If so, do you have any comments or suggestions regarding appropriate revisions?

Respondents provided a range of substantive comments and advice in response to this question. One respondent noted that while requirements “probably should be consistent” with current practices (e.g., to address the use of “sawdust and clean wood waste [that is] required for growing media fabrication”), the ministry should focus on “environmental protection and not product quality.” Divergent comments were received regarding the place of biosolids in the regulation. On the one hand, several respondents commented that “biosolids should be easier to sell [if government regulation is explicit], as the public is afraid of them [and] having specific requirements for their sale will put consumers at ease.” Other respondents felt otherwise, for example: “we simply believe that sewer sludge compost should have no place on the public market – certainly if composed it should have strict guidelines but it should only be utilized for industrial purposes – keep it away from the public.”

Specific comments included:

- “Biosolids should be separately identified as compared to ordinary compost (i.e., yard & garden waste)”;
- “The requirement for organic matter content for biosolids growing medium in Schedule 11 should be changed to 20% instead of 15% dry weight to better reflect guidelines published by the BC Society of Landscape Architects and the BC Landscape & Nursery Trades Association entitled, *British Columbia Landscape Standards, 6th Edition, January 2001*”;
- “The specific method for determining the C:N ratio should be identified in Schedule 11 as Total Carbon to Total Kjeldahl Nitrogen”;
- “Guidance and a process is needed for approving specialty soil products made with biosolids, such as potting soil or roof top garden mixes that do not meet the biosolids growing medium requirements in Schedule 11”;
- “Yes – please review the Soils Section of the 2001 BC Landscape Standard for organic matter – sand guidelines”;
- “Quality criteria will need to be revised to ensure that residual from the expanded feedstock (wood preservatives, pharmaceuticals in livestock) are adequately assessed in the finished products”;

- “Clarify the description of foreign matter in a biosolids growing media. The OMRR references the compost descriptor for foreign matter. Rocks and stones over 2.5 cm can be typical, or actually desirable in a biosolids growing media in mine reclamation or restoration. Rocks and stones are not foreign in soil”; and
- “Maximum organic matter content should be removed from the regulation as increased organic matter is required in many applications, and the basis for the restriction is unknown if the trace element limits are retained.”

Question 4.2: Should notification or registration of operation (similar to notification for a composting facility under OMRR section 25) be required for a biosolids growing medium facility? Why or why not?

Most respondents who commented on this issue felt that notification should be required for a biosolids growing medium facility. Several respondents accompanied this recommendation comments, such as: “biosolids require a different treatment and have no end of different elements in their composition which have the capacity to have more negative environmental impact than regular compost”; “odour can be a real problem with biosolids”; and “for consideration in emergency planning.”

One respondent commented that “I do not endorse inclusion of sewage in future soil mixtures with the exception being for re-vegetation of ‘mine tailings ponds’ and mine re-vegetation.” Another provided the following rationale for recommending against notification: “biosolids growing media ‘facilities’ are typically set up for the production of soil on that side, and are short term in nature. The biosolids must meet the OMRR standards prior to use. What is the reason for the notification? If notification is for compliance, the production of biosolids growing media should require validation by a QP. Currently there is no ‘check’ on the quality of biosolids growing medium.”

Discussion Issue 5: Additional housekeeping changes

The ministry is reviewing the OMRR for errors of omission and consistency with established government legislation and policy. One revision to the OMRR being considered is to ensure that leachate and odours arising from storage of organic matter, as well as those related to the composting of organic matter, are appropriately and consistently managed to protect the environment and human health. A second set of revisions being considered involves notification of land application of managed organic matter. The ministry is reviewing these provisions – frequency of notification, requirements for preparation and scope (time period and number of applications and sites) for which a land application plan is applicable – for effectiveness in achieving environmental protection objectives and efficiency for government staff and those responsible for preparing plans.

Question 5.1: Do you have any comments or suggestions for the ministry regarding the management and regulation of defined organic matter in storage and while being composted, and means of improving consistency in application of OMRR?

Respondents generally recognized that “composting and storage of finished stable compost are two different things” while noting that odour, leachate and other environmental considerations remain a concern with composted matter in storage and should be subject to requirements under the regulation. Comments and suggestions from respondents included:

- “Definitions provided for storage facility and storage site are ambiguous and overlap...clarify or further define ‘structure’ in the ‘storage facility’ definition”;
- “Non-compliance penalties need to be addressed – there are too many non-compliant sites that

continue to operate”;

- “Potential dispersal of insects and plant pathogens during storage, as well as potential contamination of composted material”; and
- “Better notification required to inform [the] public of compost material quality: What materials went into compost? Testing criteria? Pesticides vs organic materials?”

Question 5.2: Do you have any comments or suggestions for the ministry regarding notification requirements for the land application of managed organic matter?

Most respondents who commented on this question recommended that existing notification requirements in the regulation be retained. A number of respondents also made suggestions for improving the notification process, including:

- “MOE be required to acknowledge receipt of Schedule 13”;
- “Stratify the requirement based on where the material is being applied – very different if applying on a park or dairy farmer’s field for immediate incorporation – most farmers would not go through to very involved process to get an application approved”;
- “Leave notification of Class A applications as is – managing plans for various applications is a heavy load on ministry – OMRR needs to be specific in what would require notification”;
- “Tie in with Environmental Farm Plan (not sure that notification requirements would be helpful)”;
- “Depends what the ‘managed organic matter’ consists of – biosolids, yes, notification [should be] required – Grade ‘A’ compost one notification of intended multi applications would be sufficient if in fact any are needed”;
- “OMRR should specify where the notifications should be sent”; and
- “There should be some requirement for regulators having jurisdiction to respect the 30-day notification period in order to maintain schedules and meet customer needs and expectations.”

Discussion Issue 6: Best Management Practices

The ministry intends to support development of best management practices (BMPs) that would provide assistance to persons governed by OMRR in meeting their legal requirements under the regulation.

Question 6.1: What comments or suggestions do you have for the ministry regarding the development of BMPs (e.g., existing information sources, organizations and/or agencies that could or should be involved)?

Most respondents supported development of BMPs in order to ‘provide a guideline of normal practices used by the industry.’ Respondents provided many practical suggestions for development of BMPs and/or updates to the regulation, including:

- “[Review and consider] CCME, BNQ, existing BMPs and guidance documents from other jurisdictions”;
- “Include INAC to try to establish consistent regulations for facilities on First Nations land”;
- “Should involve people directly in the compost business and QP’s who are monitoring operations”;

- “BCMAL, Plant Health Unit could be involved re BMPs for handling infected/infested material that could impact plant health”;
- “Awareness of advancements in biosolids and composting technologies can be achieved through professional organizations such as the CWWA. OMRR should allow for these evolutions in technologies”;
- “In the context of... food waste composting, input should be sought from actual operators (not just consultants) of successful composting facilities – this may require going outside of the province as there are very few successful food waste composters in BC”;
- “Improved guidance is needed for – establishing background metals concentrations on coarse rock, selecting appropriate procedures for determining Cr+6 (used instead of total chromium, sampling and analysis of foreign matter in biosolids, and site-specific numeric soil standards for land that has high natural background levels of specified trace metals”;
- “Guidance and a process is needed for approving specialty soil products made with biosolids, such as soil amendments, potting soil, or roof top garden mixes that are intended to have special characteristics that do not meet the biosolids growing medium requirements of Schedule 11”;
- “Strongly request that the review of BMP for pathogen management, as it pertains to pulp and paper mill biosolids, include industry representation”; and
- “Ministry of Agriculture, Canadian Food Inspection Agency, Environmental Farm Plan staff.”

Discussion Issue 7: Assuring compliance and consistent administration of the regulation

The ministry is seeking comments and suggestions regarding administration (i.e., implementation) of the regulation. It is important for those involved in design, operation and use of composting facilities, government staff (from the Ministry of Environment, and other agencies at provincial, federal and local levels) and other key interests to be aware of and understand the nature and provisions of the regulation. Information dissemination needs to be cost-effective and appropriate to the audiences involved and could include targeted workshops or presentations, printed materials and/or web-based information.

Question 7.1: What comments or suggestions do you have for the ministry regarding appropriate and effective means for assuring compliance?

Respondents commonly emphasized the importance of well trained and knowledgeable field staff in support of monitoring and enforcement. One respondent noted that “the composting industry appears to be large enough to demand full time officers who are knowledgeable in the OMRR and composting who visit sites to ensure compliance.” Many respondents recommended inspections and audits on both a regular and random basis, with some also suggesting “third party compliance audits.” Respondents suggested an approach based on “information, [building understanding] and cooperation, with the ability to deal with events [i.e., a response to varying non-compliance situations] that may arise.” One respondent recommended that the ministry “consider levying fees to pay for a proper site inspection and compliance reporting.”

Respondents also commented that “non-compliance penalties need to be addressed,” noting, in the words of one respondent, that “there are too many non-compliant sites that continue to operate... financial penalties should be implemented.”

Question 7.2: What advice or suggestions do you have regarding effective implementation and administration of the regulation?

Many respondents commented on the mix of jurisdictional levels that have regulations affecting organic matter recycling, and the need to harmonize OMRR requirements with local government and other agencies (such as the ALC). One respondent noted, for example, that “jurisdictional issues arise when compost feedstock is from a variety of sources (such as municipal solid waste, industrial waste, agricultural waste).” Another noted that “most municipal and regional district regulations are prohibitive and oppressive (e.g., CRD – zero tolerance for odour at property boundary [with] \$100m/day cumulative fine).”

Specific suggestions from respondents included:

- “Provide technical training programs and workshops which complement the BMPs”;
- “Work with local government, perhaps a seminar at annual UBCM convention”;
- “If it might be a concern to the public, involve them”;
- “Public awareness could be jointly carried out by the ministry and industry, especially when the new materials are being added to Schedule 12”;
- “Local level of government have little to no expertise in this field and further[more different] areas are developing different regulations – the reg's should be Province wide...the MOE should maintain control – they know what they are doing”;
- “OMRR, or parts of the OMRR should be demarcated into biosolids related requirements in one section and compost requirements in another, to aid in using/interpreting the regulations correctly. In its present format, compost and biosolids requirements can be easily confused especially when referring to facility, storage, and production requirements”;
- “Schedules 1, 2, and 3 could be simplified – care should be taken to avoid overlapping and potentially conflicting requirements in these Schedules”;
- “Delete the word “sale” in Part 2, Section 2(3)(b) of the OMRR to eliminate any potential conflict between the OMRR and the *Federal Fertilizer Act*”; and
- “OMRR Section 2 (2) (c) states that OMRR does not regulate agricultural waste composting – the ministry should clarify whether OMRR applies to composting of agricultural waste at a facility that is not a farm or on a farm.”

Discussion Issue 8: Protection of human health and the environment

Question 8.1: Are there any aspects of the regulation and management of organic matter recycling that could significantly affect human health or the environment that are not, in your view, sufficiently addressed in the proposed revisions to the OMRR? What, if any, are they? What suggestions do you have for the ministry to improve the manner in which these concerns are addressed?

A number of specific comments and recommendations were made in response to this question:

- “Schedule 4: At this time Trade Memorandum T-4-93 does not include limits for chromium or copper. Section 3 should include a stipulation that where Trade Memorandum T-4-93 does not include a limit for a substance listed in Section 1 then at minimum the limit for Class B biosolids must be met”;
- “Need more clarification on requirements for sites that will be accepting animal carcasses. How

to ensure issues associated with avian influenza, BSE, and similar diseases are addressed”;

- “The issue of emerging contaminants of potential concern including pharmaceuticals and personal care products is not addressed in the current regulation. These issues are often top of mind for members of the concerned public and ENGO's. These issues are exceedingly complex, very broadly based, and require significant resources that are beyond the scope of individual municipalities to address. The Ministry should promote the formation of a standing Committee comprising senior levels of government to oversee the research needs and the development of appropriate response measures”;
- “Environmental issues related to pathways for spread of plant pathogens, insects and invasive plant seeds/propagules to adjacent sites and through cross-contamination of compost”;
- “Expanding the definition of clean wood to include construction and demolition wastes has the potential to adversely affect human health and the environment and current quality protocol are not sufficient to identify contaminants from these sources. Consideration of eliminating environmental impact assessments could also have detrimental effect on human health and environment associated with operation of composting facilities”;
- “Prohibit sale of biosolids to the public”;
- “Address accumulative effects of heavy metals such as mercury in soils”;
- “Not all composting projects (such as yard wastes, random wood wastes, etc.) produce products that should be available for personal use by the public. If they are allowed, all products should specify ingredients”;
- “Increase the minimum composting requirements and address inputs individually. OMRR is too general.”

Question 8.2: Do you have any other comments or suggestions for the ministry?

Many detailed supplementary comments were provided by respondents, including recommended changes to specific sections of the existing regulation, articles relevant to organic matter recycling, comments on particular aspects of organic matter recycling (e.g., “fish composting on Vancouver Island”) and commentary and references regarding mine reclamation and organic matter recycling. The following comments provide a sample of these supplementary comments:

- “Overall, I support the concept of composting, however also want to ensure measures are taking so that it does not become a dispersal pathway for major invasive species that could be harmful to agriculture and/or the environment”;
- “Revisit the sampling and testing criteria. Our experience shows that labs treat the larger pieces in compost very differently which has a huge impact on lab results (e.g., how do the larger pieces of wood material get tested or do they get screened out in sample preparation?)”;
- “Confirm the relationship between Operational Certificates and OMRR for composting operations at MSW landfills. What are the requirements? OMRR or what is the OC”;
- “The definition of “composting” should include a statement that in addition to being controlled, that it is a managed process as well to further differentiate it from static piling of material and landfilling”;
- “The term ‘manager’ and ‘director’ is used throughout the document to refer to someone to whom LAPs or other documentation should be submitted. However, it is unclear who these are MoE, Ministry of Health, other? These positions should be identified in the list of definitions at the beginning of the document”;

- “[The term] ‘discharger’ is used to define the following responsible persons: (a) owner of a composting facility; (b) an owner of a facility that produces managed organic matter for land application; (c) a registered owner of the land where managed organic matter is applied... it is suggested that terms be used that differentiate between (a) or (b) and (c)”;
- “Section 7(4) of the OMRR should be clarified to specify whether the 5m³ limit applies to the volume of biosolids or the volume of biosolids product (growing media or soil amendment)”;
- “For Schedule 3(8) and Schedule 5(1), the OMRR should stipulate that samples must be collected at regular intervals through the year. In addition, the OMRR should specify when the samples should be collected: at the end of sewage treatment, upon delivery to the storage site or just prior to land application or distribution”;
- “Get control of local government regulations – very hard for operations to comply with unreasonable conditions”;
- “The siting of compost facilities, particularly in the Lower Mainland, is very difficult due to public concerns and poor past experience with composters. The Ministry, in revising OMRR, must balance the need for a regulatory framework that instills public confidence with the need for a process that encourages the development of responsible compost operations”;
- “OMRR, in its present form may be trying to be too many things to too many interests. Organic material comes from municipal solid waste, industrial, agricultural and other sources. Each source of material and the material itself is the responsibility of different entities (local government, industry, farming community, etc.) and yet OMRR is trying to establish a management structure with one document and basically one set of rules. It may be more effective to divide OMRR into different sections in order to recognize these differences”;
- “The requirements in the regulation must be matched with the ministry’s ability or willingness to provide the resources necessary to ensure compliance. Without this the regulatory review is a paper exercise”;
- “Strongly encourage a discussion for P&P representatives regarding the management of pathogens due to the nature of the bacteria in our systems. Demonstrating that these bacteria are non pathogenic could be accomplished with specific indicators. Also, consider the potential conflicts that may exist between the soil amendment COP and Biosolids Growing Medium. There are beneficial reuse options for these materials”;
- “Internal communication and education within the Ministry personnel in regards to the OMRR – more interaction between producers and Ministry”;
- “Regulate the number of compost sites – the market can only handle so many sites – saturation of sites undermines the financial viability and therefore the quality of established sites”;
- “Raising the standards is a must to ensure all products sold to the public are safe”;
- “MOE must maintain control – do not farm it out to other levels of government”;
- “It is in regard to the “use or land application of biosolids” that our industry [mining] has concerns... the use of biosolids in the reclamation of mine sites has been proven by many case studies to provide a successful growing medium that satisfies land use, capability, and water quality objectives; Biosolids are an important amendment material to mineral and metal rich soils (such as mine tailings) and have been shown to be practical, environmentally safe and effective;... For mine site reclamation, the use of biosolids provides net environmental benefits at a minimal risk. As such, the MABC supports the application of biosolids to soils or substrates that have high mineral and metal content...Based on direct experiences of the OMRR regulation at our mine site

operations, we believe that the administration of the OMRR is negatively affecting our ability to reclaim our mine sites in a progressive and responsible manner...Our position is that the application of biosolids to mineral and metal rich soils and substrates (such as mine tailings) should not be restricted or hindered by the OMRR and should be more closely linked and harmonized with mine operation and reclamation permits issued under the *Mines Act* and the Soil Enhancement Using Waste Code of Practice under the *Environmental Management Act*";

- “Will, or are composting systems being employed/considered for BC provide assurances of meeting necessary requirements to cause discarded organics [bioplastics] to be converted to adequate quality compost?”; and
- “In our opinion, production of artificial soils made from municipal-sourced organic wastes must first begin with steam sterilization of the wastes in order to guarantee that the end product will meet minimum (federal) agriculture quarantine control specifications.”

Appendix 1: Common Acronyms and Abbreviations Used in Submissions and this Summary

Acronym/Abbreviation	Term
ALC	Agricultural Land Commission
BC	British Columbia
BCMAL	British Columbia Ministry of Agriculture and Lands
BMPs	Best Management Practices
BNQ	Bureau de normalisation du Québec
BSE	Bovine spongiform encephalopathy
CCME	Canadian Council of Ministers of Environment
CFIA	Canadian Food Inspection Agency
COP	code of practice
CRD	Capital Regional District
CSR	Contaminated Sites Regulation
CWWA	Canadian Waste Water Association
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
EMA	<i>Environmental Management Act</i>
EPA	(United States) Environmental Protection Agency
INAC	Indian and Northern Affairs Canada
LAP	Land Application Plan
m	metre
m ³	cubic metre
MABC	Mining Association of British Columbia
MDS	Minimum Distance Separation
MOE	Ministry of Environment
MSW	Municipal Solid Waste (Regulation)
OC	Operational Certificate
OMRR	Organic Matter Recycling Regulation
P&P	pulp and paper
QP	Qualified Professional
UBCM	Union of British Columbia Municipalities
US	United States
WDR	Waste Discharge Regulation

Appendix 2: Summary of Detailed Submission Received Following Close of Comment Period

This appendix summarizes a detailed submission received by the ministry after the close of the comment period.

“[We] look forward to a more enabling regulation for the beneficial use of biosolids resulting from this review process. It is [our] goal to find the highest and most beneficial use of biosolids that is protective of human and health and the environment...”

The submission included comments grouped under three headings:

1. Enabling Reclamation and Soil Improvement;
2. Biosolids Growing Medium (BGM); and
3. The Soil Amendment Code of Practice.

1. Enabling Reclamation and Soil Improvement

With respect to reclamation and soil improvement, the respondent commented that: “we support the ministry’s initiative to cease the issuance of separate discharge permits or approvals to use biosolids for the purposes of land reclamation. To address the issue of land reclamation on sites with trace element concentrations in excess of the OMRR limits, the following clauses would provide for greater clarification: 1) managed organic matter must not be applied to an application site if the application is likely to cause contamination of the site, as determined by a qualified professional; and 2) managed organic matter must not be applied to an application site if the application site is a contaminated site and the application is likely to exacerbate the contamination of the site, as determined by a qualified professional.”

2. Biosolids Growing Medium (BGM)

In commenting on requirements for notification of biosolids growing medium (BGM) mixing facilities under the OMRR review process, the respondent noted that “[based on our understanding that] the intended purpose of providing notification is to enable some kind of oversight of BGM mixing activities, either by a qualified professional or Ministry staff...[and] that the requirement is not intended as an approval or application process...[requiring only such information as location of facility, contact and capacity]...[we] do not foresee any problem in complying with a requirement to notify of BGM mixing in [this] manner.”

The respondent provided the following detailed suggested changes that would “enhance [our organization’s] ability to produce BGM that meets customer requirements while continuing to be protective of the environment.” The respondent also noted that the recommended changes “would enable biosolids use in sustainable initiatives including water conservation gardening and GHG/carbon sequestration initiatives:”

- “1. The current BGM TKN limit of 0.6% is acceptable for a final soil nitrogen concentration; however, it creates difficulties because of the requirement to add significant quantities of sand prior to distribution. Specifically, it is prohibitive where reclamation sites require a BGM or soil conditioner with a higher nitrogen concentration and less sand to augment existing soil resources. Therefore we propose an increase in the OMRR BGM TKN limit to a maximum of 1%. Alternatively, a section with separate specifications for a soil conditioner could be added that would allow for products with a nitrogen concentration of less than or equal to 1%.
2. In the preparation of BGM, the carbon to nitrogen ration (C:N ratio) will decrease as the carbon is consumed until a steady state is reached – typically at a ration between 8-12. The C:N ration of productive

growing media is less than the limit in the OMRR and is difficult to achieve while optimizing the nutrient and organic matter content. The B.C. landscape industry specifies that growing media must have a C:N ratio of less than 40:1, with no lower limit. It is proposed that the C:N ratio for BGM be removed from OMRR to match industry specifications to supply the products that customers require.

3. The maximum organic matter content in the OMRR is not aligned with the B.C. landscape industry specified standards. The increased organic matter concentration is important for nutrient cycling and soil water storage; an important factor in xeriscaping and water conservation gardening. [We would] recommend an increase in the maximum organic matter concentration to 20% to match industry specifications to supply the products that customers require.”

To address these recommendations, the respondent suggested the following wording for inclusion in the proposed amendments to the regulation: “biosolids growing medium must meet *all* of the following standards: 1) substance concentrations listed in Schedule 4, Column 2; 2) Total Kjeldahl Nitrogen (TKN) <1.0% by weight; *and* 3) organic matter content <20% dry weight.”

The respondent also commented that “the use of residuals in value-added products such as BGM is an effective way to recycle the beneficial properties of these materials and offset volumes sent for disposal [however] the current legislation focuses primarily on direct land application of these residual materials rather than the potential for using them as feedstock to produce a growing medium.” The respondent felt that “the goal of legislation should be to maximize recycling of residuals while protecting the environment by requiring compliance with OMRR quality criteria for fabricated soil” and identifying all potential feedstocks to a fabricated soil directly in the regulation may prove to be restrictive of materials not contemplate at the time of writing but deemed appropriate in the future.”

3. Soil Amendment Code of Practice

The respondent noted that there is potential to confuse regulatory jurisdiction between OMRR and the Soil Amendment Code of Practice. “The Soil Amendment Code of Practice enables the use of fly ash from burning of wood, pulp and paper residuals, pulp and domestic sewage, drinking water residuals and industrial wood residues” while “one of the biosolids management options covered by the OMRR is the production of biosolids growing medium [which might involve drinking water residuals].”

The respondent commented that “products are fabricated by mixing biosolids with various other feedstock materials depending on the intended use, such as sand and woodwaste for a landscaping soil product, or woodwaste for a reclamation-grade mix” and recommended that “to allow the opportunity to use water treatment residuals, woodwaste and/or other residuals managed under the Soil Amendment Code of Practice with biosolids” the following clause be added to the regulation: “where residuals regulated under the Soil Amendment Code of Practice are used in combination with a minimum 10% biosolids, OMRR will be the governing regulation.”