

AGRICULTURAL WASTE CONTROL REGULATION

SUMMARY OF PUBLIC COMMENTS

ON THE

POLICY INTENTIONS PAPER

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Agricultural Waste Control Regulation (AWCR) Consultation – Summary of Public Comments

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Agricultural Waste Control Regulation (AWCR) Consultation

1. Introduction

The Ministry of Environment (the ministry) is reviewing the Agricultural Waste Control Regulation (AWCR) with the intention of revising the regulation. The AWCR describes environmentally sound practices for using, storing and managing wastes (such as manure) and by-products (such as composted materials) from agriculture.

This report provides a summary of stakeholder comments received during the public consultation process held from January 27, 2012 to May 31, 2012, to seek input on the ministry's intentions.

These comments respond to the initial proposals in the Policy Intentions Paper; however, on the basis of early feedback, the Ministry embarked upon a stakeholder engagement process, to further consult with the agriculture industry. Nevertheless, the ministry feels it is important to capture and report on those views received during the initial public consultation period in a transparent manner.

1.1 Background to the consultation process

The consultation paper was posted for public review and comment on the ministry's website (www.env.gov.bc.ca/epd/codes) January 2012 through May 31, 2012. The consultation paper provided background information and identified consultation issues for discussion to build understanding about the subject and provide a structure for comments and feedback.

1.2 Purpose and format of the *Summary of Public Comments* document

This document has been prepared for the Ministry of Environment by C. Rankin & Associates, contracted by the ministry to independently receive, compile and review comments.

The complete set of responses received through the consultation process has been compiled and passed to the ministry for detailed review and consideration. 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 developing the regulations.

1.3 Description of responses received

One hundred and nineteen responses to the intentions paper were received (by mail, fax, e-mail and attached file), and have been reviewed for this summary of public comments. About two-thirds of respondents identified themselves as working in the agricultural sector. A substantive number of responses were received from provincial or regional agricultural organizations from various sectors, including cattle feeders, cattlemen, dairy, pork producers, greenhouse growers and growers associations. A number of responses were received from government agencies, including local, regional, provincial and federal government agencies.

Discussion Areas and Questions

The following discussion areas and question are based on a policy intentions paper for consultation available from the Ministry of Environment website.

1. Ministry objectives for proposed revisions?

The ministry is proposing revisions to the Agricultural Waste Control Regulation for regulating discharges to the environment from agricultural operations with the objectives of: establishing consistent standards and requirements; providing clear regulatory direction, appropriate to the degree of risk; reducing and removing wastes and toxins from the environment; focusing on desired environmental conditions rather than prescribed agricultural practices where appropriate; shifting to regulating discharges from agricultural operations by a code of practice (minister's regulation) and updating regulatory provisions to incorporate current and emerging trends and technologies (see section 3.1 of the intentions paper).

Response Form Question 1.1: Do you have any general comments regarding the ministry's objectives for proposed revisions?

While many respondents expressed support or agreement with the “general intent” of the ministry’s objectives, frequently respondents expressed concern that a “one size fits all” approach to regulation of agricultural practices would not meet the ministry’s objectives for the regulation. Respondents recommended, for example, “concentrating on high risk areas and agricultural operations”, as well as considering “degree of risk to the environment” and not “imposing burdensome regulations on small scale agricultural operations... at a time when local food sovereignty and sustainability is becoming increasingly important”.

Several respondents expressed concern about the ministry’s objective of “establishing consistent standards and requirements” commenting, for example, that “imposing blanket restrictions on all agricultural sectors... is not appropriate in a province where climate, soil, geography and population is so diverse... what may be right for the Fraser Valley with a shallow aquifer, permeable soil and high rainfall is certainly not right for most areas in the Southern Interior, Central Interior, Northern Interior or Peace regions”. Suggestions from respondents included: “set[ting] a minimum [farm size] threshold for application of the proposed changes”; “graduated standards”; and “regional guidelines”. “Those who are developing solutions [should] understand both water quality and agricultural production”, providing the agricultural community with “evidence-based information... [that supports the] viability of their farming operations in the long term”. Suggested methods for achieving the ministry’s objectives included “education and information sharing, incentives, technical assistance, financial assistance, and peer or community pressure... or recognition... [rather than over reliance on] regulation”.

A number of respondents commented that members of the agricultural community are good stewards of the land and recognize the “need to be fully aware of their environment and the land, as this is their most important asset” and that “water sources are a valuable asset on any farm and one that is treated with respect”. Several respondents pointed to participation in the proactive Environmental Farm Plan guidelines and the Good Agriculture Practices Guide as means to “incorporate sound environmental practices for waste management, specific to the

individual producer's land and products". One respondent, for example, commented that farmers and ranchers "are in a unique position to voluntarily engage in conservation practices that provide multiple ecosystem services and enhance water quality more efficiently and cost effectively than mandatory rules".

Several respondents expressed concern about the ministry's objective of "focusing on desired environmental conditions rather than prescribed agricultural practices". One respondent, for example, commented that "use of prescribed agricultural practices is done in good faith... [and] any change in focus that does not acknowledge this fact could be viewed as heavy-handed and generate an adversarial relationship between regulators and the agriculture industry". The respondent suggested that developing "changes in practice in conjunction with farmers will have a greater and more immediate effect". Another respondent commented that "prescribed agricultural practices are easier to follow than the [proposed] standard, so it would take time, practice, education and assistance to bring farmers up to speed with the ministry's objectives".

A number of respondents acknowledged or expressed agreement with the need to protect water quality and "various aspects of ecosystem health". One respondent, for example, noted that "the proposed changes to the regulation support the objectives of the [Ministry of Health] Health Protection Branch for good stewardship of water resources and for food safety".

Another respondent commented that "nitrate levels...[and] water quality... combined with lack of riparian vegetation and sedimentation... are big problems in this [Fraser Valley] region, resulting in poor surface water quality, increased risk to groundwater and risk to habitat, and to fish and wildlife and human health". Respondents who commented on this subject also commonly recommended "clear regulation" and/or "explicit enforcement" in support of the ministry's objectives.

2. Revised definitions

The ministry intends to update definitions in the revised regulation to ensure that they are consistent with ministry intention, current practices and other legislation and regulations (see section 5.1 of the intentions paper).

Response Form Question 2.1: Do you have any comments or suggestions regarding the definition of agricultural operations as applies to the regulation?

Two common themes were apparent in comments made by respondents on this topic. First, many respondents recommended that "definitions should be consistent with other legislation and regulations" such as the *Drinking Water Protection Act*, the "taxation roll" and local government regulations. Second, many respondents suggested an "exemption" or "cut off" for small scale farm operations, or a distinction between small scale or organic farms and "industrial agricultural" or "intensive" operations.

Specific comments or recommendations made by respondents included:

- "The focus does not address non-animal operations [such as the impact of agricultural waste from greenhouse operations] very clearly and specifically"
- "Not specific enough... lumping cattle on range with mushrooms... seems to be too broad"

- “There are ‘agricultural wastes’ such as hatchery waste that [are] currently considered an industrial waste by some – such discrepancies should be avoided and streamlined”
- “This would be a very good time to properly define what is considered ‘agricultural solid waste’ as opposed to ‘municipal solid waste (MSW)’”
- “It must be clarified whether or not agriculture plastics such as twine, sheet plastic, silage and hay bale bags, pipe and planting pots are included in these revisions”
- “Clarify ‘disposal’ of agricultural by-products”
- “The impact of agricultural waste from greenhouse operations and other ‘vegetative’ type[s] of operation is not addressed specifically [in the definition]... in my opinion, agricultural waste from greenhouse operations, and from other vegetative type operations need to be specifically included”

Response Form Question 2.2: Do you have any comments or suggestions regarding the definition of agricultural wastes as applies to the regulation?

Many respondents commented that the term “agricultural wastes” is not necessarily appropriate as “if recognized properly, nothing in agriculture is a waste” and “not a toxic material” and rather should be considered as a “resource” offering value as a soil nutrient and/or amendment. Some respondents suggested making a clear distinction between types of materials that are defined, for example, between “mortalities, wood products and manure” with one respondent, for example, recommending “a more refined definition of the waste and byproducts of the various sectors of the agriculture industry”. Another respondent expressed concern that a broad definition encompassing “agriculture byproducts [applied to the regulation]... would dramatically increase the scope of... the regulation” and associated handling requirements.

Additional specific comments or recommendations made by respondents included:

- “Agricultural wastes should include forestry wastes, as per the US Forest Service”
- “Pulp and paper mill sludge and related contaminants should be re-classified as suited for agriculture or artificial forestry soils [after appropriate treatment]”
- “Separated manures which include the dry and wet portions [should] be dealt with separately as they have different characteristics... effluent from flush barns and milk house waste should [also] be included [in the definition]”
- “[Include] agricultural plastics [such as baler twine, haylage wrap and silage bags] in the definition of agricultural waste”
- “[The term] ‘agricultural by-products’ do[es] not cover all the ‘nutrient rich by-products’ that are used as a source of nutrients on farms... use the latter terminology as this encompasses all materials including compost from other sources that is used on agricultural land – it will also include AD [anaerobic digestion] digestate”

Response Form Question 2.3: Do you have any comments or suggestions regarding the definition of agricultural by-products as applies to the regulation?

Most respondents agreed that “agricultural by-products should be added to the definition”. Respondents commented, for example, that “by-products such as composted materials are a valuable asset to agricultural operations and are already stabilized through the biological decomposition cycle” and that “livestock manure is a valuable agricultural by-product that is commonly used throughout the world to amend and improve the soil for crop production”.

Specific comments made by respondents included:

- “Quality compost/digestate is already stabilized and will not create leachate”
- “All the by-products associated with the emerging technologies should be identified and listed unless there is a method of generalizing that is not exclusive of future technologies”
- “The quality of the AQC [agriculture quarantine control] end product is monitored in real time and is quarantined by the AQC plant to meet customer specifications”

Response Form Question 2.4: Do you have any other comments or suggestions regarding definitions for the ministry to consider in revising the regulation?

Many respondents who commented on this question restated specific points related to other response form questions. For example, several respondents expressed concern about a “one size fits all” approach to definitions. Several respondents suggested that “the definitions need to be reviewed in consultation with the agricultural industry and producers”.

Specific comments or recommendations made by respondents included:

- “Exempt small farms using organic practices and low input agriculture, and all certified organic farm operations given that Canadian standards CGSB/CAN 32-310 addresses environmental concerns and potential contamination”
- “Reconsider the definition of a storage area”
- “Define and explain the difference between a Code of Practice and Regulation”
- “Restore the original definitions for ‘confined livestock area’ and ‘seasonal feeding area’ ”
- “Watercourse is too broad a term”
- “No compost product should be offered for sale to the public unless it has been sterilized in a federally regulated AQC plant … vermicomposting should be restricted for application to sterile media only”
- “If the ministry wishes to widen the definition of agricultural by-products to nutrient rich by products, it may be prudent to use [the term] ‘products’ rather than ‘by-products’ to include manure itself in the raw state”
- “Consideration should be given to erosion sediment as a possible ‘by-product’ ”

3. On-farm transport of agricultural wastes and by-products

The ministry is considering including requirements for proper containment of agricultural wastes or by-products when being moved on-site or from site-to-site to ensure that no spills or leakage will result in runoff into watercourses, or off the property (see section 5.2 of the intentions paper).

Response Form Question 3.1: Do you have any comments or suggestions regarding regulation of on-farm transport of wastes and by-products?

Many respondents who commented on this topic felt that regulation of on-farm transport of wastes and by-products should only be developed “in response to an identified need” or that “there are already regulations for environmental [concerns related to] transportation”. One respondent, for example, recommended that “the ministry... implement a spill reporting system... [and] ensure that any requirements are scale appropriate and take into consideration location and impact on agriculture producers”.

Specific comments or recommendations made by respondents included:

- “Ensure that materials are properly contained so there is no leakage of pathogens into the environment”
- “From a *Fisheries Act* perspective, it is good to see that manure hauling companies are being included in this regulation”
- “It is important to maintain the economic viability of ag-waste transportation... a risk-based approach to temporary storage may be a good compromise...”
- “A code for haulers might also specify certain issues such as how trucks/trailers are cleaned out re run-off to watercourses, etc.”
- “When spills, especially those that effect waterways, do occur, there should be substantial fines”

4. Storage of agricultural wastes and by-products

A. Storage facility requirements (see intentions paper section 5.3 A)

Response Form Question 4.1: Do you have any comments regarding the proposed definition of a storage facility?

Many respondents commented on this topic. Respondents who worked in the agriculture sector commonly expressed concern about the ministry’s proposed definition of a storage facility, commenting, for example, that “[this proposal] would cripple the agriculture industry with extremely high costs and minimal environmental benefits” or that “for most of the small farmers it would not be feasible, or even desirable, to meet the proposed coverage and setback regulations”.

A limited number of respondents in contrast, expressed support for strengthened storage provisions. One respondent, for example, commented that “covered waste storage is required virtu-

ally all over the world but not enforced in BC". Another noted that "the lack of storage for agriculture wastes is a significant driver in determining if there will be *Fisheries Act* violations at a farm".

A number of respondents commented that "six months storage is more than adequate for BC" noting, for example, that "the amount of waste that could possibly run off into watercourses from such activities (sorting corrals, calving pens, feeding areas etc.) is very minimal, and poses no risk to the environment".

Regional distinctions were a concern of many respondents. For example, some respondents commented that the "regulations appear to be targeting the lower Fraser Valley but will still apply to the interior ranchers where this level of restriction is not required... there are fewer waterways and groundwater is not readily impacted". Another respondent commented that "climate varies, therefore facilities must vary".

A number of respondents suggested that "a baseline for monitoring and what it would encompass [be established]" commenting, for example, that "the original definition of a confined livestock area [is] much more useful as it defined what an area was actually used for". Several respondents commented that "no definition is provided in the intentions paper for 'confined livestock areas'".

One respondent provided a comparison with regulations governing agricultural waste in Alberta where: "provisions were made for grandfathering of already existing livestock operations; there are exemptions for smaller operations and lower livestock densities; a tiered approach was adopted with requirements based on livestock numbers, densities, and/or volumes of manure or nutrients generated; and significantly more flexibility is provided to allow operators to meet the desired outcomes, rather than adopting a prescriptive approach".

Specific comments or recommendations made by respondents included:

- "There are few if any place[s] in BC where livestock can be sustained primarily from grazing year round... normally livestock must be completely removed from vegetated areas during the wet season to avoid serious degradation if not complete destruction of the vegetative cover from trampling and overgrazing and consequent erosion"
- "In most of the province confined livestock areas would be unavoidable ... this will cause major difficulties for livestock agriculture particularly on small lots"
- "The enormous cost of compliance with all these measures is likely to have an unintended effect - it will drive agriculture further towards intensification, as producers are forced to pursue economies of scale"
- "We suggest that storage facilities be further characterized based upon their construction, contents and type of agricultural operations"
- "Please add manure storage pits that are located under slatted concrete floors"
- "With the proposed revisions if a feedlot is abandoned the acreage will be lost as farmland, as it would be very expensive to remove the building and cement and it would take years before the land was productive again"

Response Form Question 4.2: : Do you have any comments regarding requirements for storage of agricultural wastes and by-products?

Many respondents who commented on this topic reiterated concerns related to the ministry's proposed intentions in general or to specific considerations for storage of agricultural wastes.

Respondents comments included: "field storage of manure is a long standing and harmless practice under most circumstances"; "should have guidelines only and not be required to build facilities"; "berms may not be appropriate"; "requirements are inappropriate and excessive for small quantities of organic materials"; and "an impermeable floor may or may not be necessary, depending on the type of material being stored".

Comments related to requirements for cover of stored agricultural waste included: "requirement[s]... should be climate dependent - there is often no need to cover wastes and by-products in arid areas of the province"; "a flexible cover (e.g., polyethylene or breathable membrane) in many cases is more appropriate than a building"; and "the practical ability to cover an existing lagoon given its size and shape is a consideration".

Several respondents commented on the length of time that agricultural wastes are stored and associated storage requirements. One respondent, for example recommended that "six months manure storage is adequate since the manure is used as fertilizer during the summer months" while another respondent noted that "the longer manure sits in storage the more methane is produced and escaping into the atmosphere".

Recommendations from respondents included: "we feel that if your storage facility is sized to contain rainwater... this should be okay"; "the new regulation should be consistent with OMRR, where the material can be covered with an appropriate cover that still meets the requirement of 'cover' but not necessarily a 'roof' "; "there needs to be some level of exemption... there is a huge difference between the polluting capacities of a lagoon of liquid manure and small piles of solid manure/bedding"; and "Environmental Farm Plan encouragement would be much more appropriate than mandatory storage facility standards - establish regionally based criteria based on precipitation levels, soil type and conditions".

Response Form Question 4.3: Do you have any comments regarding setback distance requirements for storage facilities?

Many respondents who commented on this topic reiterated concerns related to the ministry's proposed intentions in general or to specific considerations for storage of agricultural wastes.

Many respondents expressed concern that the costs involved in moving existing facilities that do not meet proposed setback requirements would be prohibitive while not necessarily "solving the problem". Several respondents noted that while they "agree with keeping storage facilities away from waterways, wells, etc... common sense needs to apply with regard to size of farm and type/amount of manure produced". Respondents frequently pointed to the difficulty that small or "oddly shaped" farms may have in meeting the proposed setback distance. A number of respondents also commented that if setback distance requirements are increased for some or all situations "existing facilities should be grandfathered in".

Some respondents expressed support for the proposed setback distance requirements or suggested that in some situations setbacks may need to be more than 30m. One respondent, for example, commented that “the 30m distance is somewhat arbitrary (and duplicates S.42 of BC Sanitary Regulation – BC *Health Act*) – this may be ok for small residential wells but larger, high capacity municipal water supply wells (etc.) might require more stringent setbacks specified in wellhead protection (source water protection) zones (e.g. as per BC *Drinking Water Protection Act* and/or municipal bylaw)”. Other comments included: “30m is comparable with other regulations”; and “the setback distance should be much greater than 30m to potable water or water-courses”.

Response Form Question 4.4: Do you have any comments regarding storage facility capacity requirements?

Many respondents who commented on this topic reiterated concerns related to the ministry’s proposed intentions in general or to specific considerations for storage of agricultural wastes.

Many respondents expressed concern that a required storage capacity based on 12 months of waste material is “excessive” or “not practical”. Respondents frequently recommended consideration of “size and scale” when setting requirements and often noted that “six months is more than adequate”. One respondent, for example, commented that “in practice adequate storage is determined by the number of months between growing seasons and an adequate reserve – this permits nutrients to be properly spread over the growing season, starting in spring and continuing through fall... requiring 12 months’ of capacity is wholly unnecessary to achieve environmental outcomes; doing so will require the construction of capacity that would never be used”. Respondents commonly pointed to the costs that would be involved in bringing existing facilities into compliance with the proposed intention and the belief that environmental benefits would be “limited... or even detrimental”.

Several respondents raised concerns that the proposed intention could have far reaching impacts for different agricultural sectors, including the equine industry, dairy producers and smaller farming operations.

Some respondents commented that the proposed term of 12 month storage capacity is “arbitrary” and may or may not be sufficient. One respondent, for example, commented that “ultimately, the amount of storage needed should be determined by how long an operator will need to store his/her waste during abnormally wet (or possibly cold) years”. Other respondents recommended that “regulatory change... should respect that requirements will vary with regional differences in climate, geography and soil conditions”. One respondent commented that “I am happy to see the increased storage requirements so that we will hopefully no longer see the spreading of liquid manure on snow! This is common in the area I live”. Another recommended “a limit to the size of storage lagoons especially the surface diameter (or length X width) so that they can be covered if and when required”.

Response Form Question 4.5: Do you have any comments regarding the proposed requirement that a qualified professional design and sign-off on the building of storage facilities for agricultural operations over a certain size, or intensity threshold?

Many respondents who commented on this topic requested further clarification regarding proposed “size or density threshold”, for example, “on the manure volume output for various livestock species”. While several respondents commented that the proposed requirement “is reasonable”, many also expressed concern that the obligation would result in additional costs for farmers who “are not posing a risk or threat [to the environment]”. Respondents also raised a concern that “given the shortage of qualified professionals... this requirement [will be] very difficult to achieve... and extremely expensive... [in] remote areas”.

Suggestions from respondents included: “inspection by a ministry expert [in lieu of sign off by a qualified professional]”; “involvement with a Ministry of Agriculture extension engineer”; “harmonization between governments and their departments [such as local government engineering and building permit requirements]”; and “vegetation management around the facility... [as] a more cost effective leaching mitigation measure”. One respondent commented that “the potential for pollution from the large number of small livestock operations cannot be ignored” and recommended “standardized designs... be made available to provide ‘sound’ effective structures available even to very small operations”.

Response Form Question 4.6: Do you have any comments regarding monitoring and testing requirements for storage facilities?

Many respondents who commented on this topic reiterated a concern that requirements for monitoring and testing could pose an undue burden on smaller operations and result in “insurmountable... paperwork and administration”. Respondents who expressed support for “reasonable” or “fair and consistent” monitoring and testing requirements commonly noted that any requirements “should be reasonable for the size and intensity of the operation” and that “producers regularly monitor storage facilities as a general practice”.

Recommendations from respondents included: “consider letting the industry self-regulate with the use of environmental farms plans, etc.”; “results [should be] reported to MOE Compliance and Enforcement [and] copies of results... provided to water purveyors that may be affected by the particular facility”; “testing of manure quality should be part of the nutrient management plan requirements [and while] leak monitoring may be required, testing for leaks should not be required”; “requirements will have to be spelled out with respect to frequency and thresholds”; and “soil samples should be taken around the perimeter of lagoons and manure pits up to a depth of one meter – samples should be tested for nitrate to indicate whether leaching is occurring”.

Response Form Question 4.7: Do you have any comments regarding the proposed phase-in dates for requirements addressing existing or new storage facilities?

Almost all respondents who identified themselves as working in the agricultural sector commented that the proposed phase-in dates were “too aggressive” or “too early” and recom-

mended “further consultation” or “[further] dialogue” with farmers and ranchers before implementing changes. Respondents commonly noted that considerable expense would be involved in meeting the proposed intentions and several recommended “grandfathering... for existing operations”. Comments in support of the proposed phase-in dates included: “I am about to build a new horse stable and already have incorporated most of this into the plans” and “realistic for big/intensive livestock operators”.

Response Form Question 4.8: Do you have any additional comments regarding appropriate requirements to ensure that storage facilities meet objectives for environmental protection?

Many respondents who provided additional comments reiterated concerns related to the ministry’s proposed intentions in general. A number of respondents expressed concern that the proposed requirements “could actually increase the risk of leachate runoff events... [as they would] encourage more intensive feeding and housing of animals”. Respondents suggested a number of alternatives that could support ministry objectives, including: “the better approach is to encourage compliance through education and programs such as the Environmental Farm Plan and Salmon Safe”; “it isn’t the storage that has been causing the problems - it is the guys out there, right now”; “most farmers are environmentally conscious... current storage facility requirements are being met”; “bring back financial incentives... not just for the engineering and planning”; and “a better way could be to meet with individual farmers that really do have an issue with storage facilities and environmental impacts on a one on one basis and try to find some financial solutions for them to address the concerns”.

B. Field storage (see intentions paper section 5.3 B)

Response Form Question 4.9: Do you have any comments regarding the proposed requirements for field storage of solid agricultural wastes and by-products?

Many respondents repeated their concern that any regulatory requirements should vary with climate, soil type, drainage and the characteristics of the materials involved. Respondents commonly pointed to the need for any regulations to recognize and reflect the practicalities of farming operations. A number of respondents commented that “the existing regulation, again, adequately enforced, is a more suitable regulatory framework”.

Differing specific recommendations were received from respondents. For example, one respondent commented that “we agree that materials should be covered - WE STRONGLY DISAGREE that materials to be stored in a field for less than two weeks should be located on an impermeable surface and bermed”. Another respondent felt that “covering field stored waste that will be spread within 2 weeks is most likely not practical - berms around storage areas might have merit - no agricultural waste should be stored over an aquifer of any kind at any time.”

Several respondents expressed concern that requiring lining of lagoons or construction of impermeable surfaces for field storage is costly, impractical and/or ineffective.

Response Form Question 4.10: Do you have any comments regarding the ministry's intention to repeal the provision for long term field storage of up to nine months for agricultural wastes, and instead, if storing for longer than two weeks, must meet storage facility requirements?

Many comments received in response to this question repeated points made in response to the previous question (4.9). Respondents commonly requested "flexibility" and practicality in development and application of requirements to achieve environmental objectives commenting, for example, that "producers should be given the option to either cover or berm confined areas". Many respondents commented that "two weeks storage is not nearly enough [time] for field storage" recommending alternatives such as "use of Environmental Farm Plans [to] allow for a more regionally suitable standard". One respondent felt that "the provision will prevent small farmers from properly aging compost [and]... will encourage raw manure to be spread upon fields to avoid the storage regulations".

A number of respondents expressed "agree[ment] with intent", commenting, for example, that "current requirements are inadequate".

C. Rainy season field storage (see intentions paper section 5.3 C)

Response Form Question 4.11: To you have any comments regarding the ministry's intention to delete reference to field storage in the "rainy season" and to require that all materials be stored in a manner that prevents leachate generation, runoff and erosion at all times of the year?

While many respondents noted support for a "requirement that materials be stored in a manner that prevents leachate generation, run-off and erosion at all times of the year" the need for "requirements [that] acknowledge differences in regional climates" was reiterated frequently.

Respondents operating in the drier interior of the province requested clarification regarding whether "the [term] 'rainy season' applied to the interior dry belt". Respondents commented, for example, that "most agricultural areas of BC do not have a rainy season that contributes to leachate generation". A number of respondents commented that "[in some regions] water has to be added to piles in the summer in dry areas just to get the composting going".

Specific comments included:

- "What is defined as runoff? Is it 100 liters per acre or millions of liters per acre?"
- "It is not good agricultural practice for farmers to waste a precious resource by allowing it to leach away"
- "Where there is known groundwater contamination from adjacent properties (e.g. old land fill) it is suggested that storage of agricultural waste is conducted at least 100 m from the know delineation of the existing plume"
- "I live across from [an Okanagan farm with]... a flush barn and very large lagoon... [after the farm began operating about ten years ago]... the nitrates [in our well] went from 0 to 6.55 in

2 years... I think they use the land as a dumping ground – we are sitting on an unconfined aquifer... the new regulation would be a gift from heaven – we could breathe some fresh air and be able to open a window and work outside – we could stop hauling water from town for ourselves and our animals... I pray for this change as I believe if we want to maintain air and water quality we have to act now”.

5. Storage and use of wood waste

The ministry is considering strengthening the conditions governing the uses of wood waste in the revised regulation (see intentions paper section 5.4).

Response Form Question 5.1: Do you have any comments or suggestions regarding appropriate requirements for storage of wood waste?

A number of respondents requested clarification or raised questions about terms and definitions related to wood waste. These included: “the term for ‘wood waste’ needs further definition”; “what defines ‘wood waste storage’?”; “would stored pelleted bedding for horses be subject to the setback requirements?”; and “the term ‘clean runoff water’ may be confusing”.

Several respondents commented that regulation of wood waste as an agricultural waste is “a double standard...[as] many wood mills in BC are located next to large watercourses” and recommended that any revised requirements “must apply to all industry not just agriculture”. Respondents pointed out, for example, that “wood waste is a natural product and is not harmful to the environment” and that “wood and wood waste are like ungulate manure are naturally occurring almost everywhere in the natural environment”. One respondent suggested that it “would be easier to regulate wood waste [while ensuring that it] not contain any of the listed contaminants (e.g., wood preservatives)”.

Respondents again commonly recommended that “any changes to regulation [of]... wood waste needs to consider climatic variation throughout BC” and that the requirements should “be more site specific not general”. Several respondents suggested that the “dry interior should not have wood waste storage requirements”.

Suggestions for developing the requirement included:

- “If sited to prevent free water from entering, neither a berm nor an impermeable surface is likely to be necessary to prevent leaching.. [requiring an] impermeable surface for temporary storage of wood byproduct is too expensive and not feasible”
- “Berms surrounding wood waste piles may have some merit ... so location of the storage piles needs to be regulated”
- “[The] 30 meter rule seems harsh without other parameters of safe storage, covering, or other stated criteria... 30 m will result in existing facilities, constructed in good faith in accordance with today’s regulations, becoming non-conforming”
- “Consider extending the length of time that clean wood waste could be stored in open, unconfined piles as opposed to once it has been used and is mixed with manure”

- “[The] regulation needs to take into consideration that cranberry beds are dyked and recover/recycle waste water from irrigation and flooding operations”
- “Regulatory enforcement should be improved”

Response Form Question 5.2: Do you have any comments or suggestions regarding appropriate requirements regarding wood waste use?

Many respondents who identified themselves as working in the agriculture sector expressed support for the use of wood waste for agricultural purposes, commenting, for example, that “wood waste is usually only considered harmful to the environment if toxic chemical preservatives have been added”, that “wood waste issues are far lower than any manure waste environmental issues” and that “it is healthier for the world if sawdust is used to build soil, instead of burning it”.

Respondents who expressed support or agreement with the intent noted, for example, that “this will greatly affect the blueberry and cranberry industry but... studies have shown we are slowly destroying our soil with the application of wood waste to it”.

Several respondents noted that “[livestock producers need and use] chips or sawdust... in corrals to combat bacteria... producers should be able to use it to supplement straw or other types of organic bedding materials”. Respondents also expressed concern that “livestock operations would be subject to strict waste control regulations while local sawmills [with far greater waste wood piles]... would not be subject to the same regulations”. Another respondent commented that inappropriate requirements “may radically reduce or eliminate the potential for crops such as blueberries grown using sawdust mulch on small farms”.

Respondents who commented on depth for application of wood waste generally noted that the current guideline (must not exceed a total depth of 30 cm) is appropriate. Some respondents requested clarification or further information about a rationale for setting a depth of 15 cm.

Specific comments or suggestions included:

- “The type and contaminant level of wood waste brought onto farms should be specified... [there are differences between] wood chips from clean wood and from used/treated wood”
- “The sale and use of the wood waste compost should be specified in relation to the source of the wood waste”
- “Distance from waterways should not be the same in all areas of the province – the same for depth applied”
- “Segregation of cedar... is good practice”
- “[Wood chips or sawdust] has very little leaching potential when it is dry and clean, but rates of decomposition accelerate when mixed with animal manure, so should be treated the same as manure once used”
- “[Overly] large setback requirements will kill small farm operations”

- “While ‘woodwaste’ is the term used in the regulations, it is actually a wood byproduct and not a waste material, most woodwaste used for agricultural purposes may include bark material”

6. Composting agricultural waste

The ministry intends to revise provisions addressing the composting of agricultural wastes (see intentions paper section 5.5).

Response Form Question 6.1: Do you have any comments regarding storage and setback requirements for composting and curing sites?

Respondents who commented on this topic reiterated many points raised in relation to provisions for storage of agricultural wastes. Many respondents expressed concern that province-wide guidance does not adequately account for differences in climate and soils. For example, one respondent commented that “the Okanagan does not have problems [associated with] excessive rain... and leaching”. Respondents also commonly expressed concern that “small scale farms” would be unduly impacted by overly rigid regulations and guidance.

Many respondents commented that “while compost should be covered” other requirements such as proposed setback distances “are unnecessarily excessive” and would be difficult for small scale farmers to meet. Several respondents also noted that “overly stringent” requirements could result in reduced incentive for farmers to compost.

Specific comments included:

- “[Requirements need] to take into account the type and amount of material being composted and the size of the site”
- “Think about the combination of riparian regs with these regs”
- “Have standards as guidelines to be met for quality of compost... product should be mixed and formed to specifications needed to enable safe application under all geotechnical conditions, with degradation rates adjusted according to the need to accelerate or delay breakdown on an in-situ basis”
- “Composting is not effective for horse manure, used bedding and should be excluded from this practice”
- “Ensure consistency with OMRR [Organic Matter Recycling Regulation] and other pertinent regulations and guidelines”
- “It is amazing that compost is not viewed in the same light as manure and woodwaste ... toxic to aquatic life and can have high levels of *E. coli*”

Response Form Question 6.2: Do you have any comments regarding minimum standards for treating agricultural wastes to ensure that they are fully degraded?

Respondents who commented on this topic frequently advised the ministry to “apply... compost standards only... in specific applications where there may be health concerns” and to support

and include a “nutrient planning process in the Environmental Farm Planning program Best Management Practices”. Several respondents commented on the difficulties involved in verifying degradation times and temperatures and recommended “minimum standards for compost [that are] outcomes[-based] not process-based”.

Specific comments included:

- “For plant/field waste it is not necessary – for manure waste it depends on the intended use”
- “Requirements may be appropriate where compost will be sold or where compost will be applied to food crops shortly before harvest... compost for human food production is different than for livestock crops”
- “Any stage of compost would be safer than un-composted manure”
- “When compost from on-farm facilities, especially when other non-agricultural waste is included and the product is sold off farm, the compost should adhere to OMRR [Organic Matter Recycling Regulation] Schedules 1, 2 and 4”

Response Form Question 6.3: Do you have any comments regarding testing of finished composted material?

Most respondents who commented on this topic felt that testing of finished composted material “is an excessive and unreasonable burden for small farms”, “is not necessary unless it is being sold for off farm use” or that “the cost versus benefit of testing [needs to be] demonstrated if regulations are to be developed”. Respondents commented, for example, that “the need for testing is, in practice, a function of the mass of composted material relative to the land base of application”; and “the [organic matter recycling] plant operator [and not the farmer/supplier] is responsible to ensure the end product meets customer design specifications”.

Respondents who expressed support for the intent commented, for example, that; “testing of the finished compost could be the most useful tool for this process”; “finished composted material should at least be tested for nitrogen, phosphorus, potassium, pH and dry matter” and “compost from on-farm facilities, especially when other non-agricultural waste is included... OR the product is sold off-farm, the compost should adhere to the same requirements as those listed in OMRR Schedules 1, 2, 3 and 4, including the testing requirements as outlined in Schedule 5”.

Response Form Question 6.4: Do you have any comments regarding the ministry’s proposal to include composting requirements for mushroom material in the composting section of the regulation?

A limited number of comments were received on this topic. Several respondents expressed concern that “there [may be] a significant amount of environmental pollution happening from ‘spent mushroom compost’ ”. One respondent, for example, commented that “mushroom compost/manure has been found to be deleterious to fish as per the *Fisheries Act* – there does

not seem to be any industry best practice for proper compost management". Another respondent commented that "[this is] another case for integration of the various regulations".

7. On-farm disposal of mortalities and slaughter & poultry processing (slaughter) wastes

The ministry is proposing that requirements for disposing of mortalities and exempt slaughter wastes produced on the agricultural operation will be the same. Also, prior to disposal, slaughter wastes would be required to be contained to ensure there is no leakage (see intentions paper section 5.6).

Response Form Question 7.1: Do you have any comments regarding requirements for managing mortalities and "exempt" slaughter wastes (see intentions paper section 5.6A)?

Respondents who commented on this topic included both those who noted support for the intent of the proposed requirements and those that "strongly disagree" with the ministry's intentions. There were three main issues that were brought forward in respondent submissions, in addition to concern about a "one size fits all approach" to regulating farming operations - location of mortalities, volume of waste involved and consistency with other regulations.

Respondents commented, for example, that "mortality numbers for livestock operations are usually very low and burying or composting should remain as an option as long as these smaller amounts of slaughter waste and mortalities is not concentrated into such a small area that it will become an environmental concern". Respondents raised concerns about the practicality of any requirements noting, for example, that "it is important to make sure the infrastructure is in place... in many areas landfill facilities are still not licensed to accept [animal mortalities or associated wastes]".

Specific comments and suggestions provided by respondents included:

- "Technical requirements under each section of [Canadian Food Inspection Agency] guidelines published in the BSE (bovine spongiforme encephalopathy) MOP [manual of procedures] on landfilling [should be acknowledged or incorporated in any requirements] [Note: the respondent provided a detailed set of guidelines for landfilling of specified risk material (SRM) addressing pre-inspection, site inspection of engineered and natural landfills, burial and inspection reports]."
- "Slaughter waste should read slaughter facilities on agricultural operations producing less than five tonnes of red meat and less than 1.5 tonnes poultry meat per year are exempt from registering under the Slaughter Code and are therefore regulated under the AWCR"
- "Rumen contents of a slaughtered animal or mortal remnants are organic/forage matter and could be used to add to soil organic matter... [these materials] are good and beneficial to soil and do not need to be buried so leakage should not be a problem"
- "An AQC facility, by definition, is a 'shred and steam' process that does not exempt any type of wastes or soils from the process"

- “OMRR Schedule 12... allows red meat in composting.... discussion... may lead to improved composting practices on-farm with testing, the AWCR and OMRR will converge”
- “The most effective method of managing these wastes might be the portable incinerators developed but never implemented when the avian influenza broke out in the Fraser Valley in 2004/2005”
- “[Consider adopting the] Farmed Animal Mass Carcass Disposal protocol [developed with local, provincial and federal government cooperation]”
- “[The Ministry of Health] MoH [worked with the Ministry of Environment] to identify optimal volumes of waste to be exempted from the Code of Practice for the Slaughter and Poultry Processing Industries (SPPI)... the volumes (<5 t red meat and <1.5 t poultry) were established because of the low environmental risk they present and because they roughly align with the volume of slaughter permitted by Class D and E slaughter licenses – a key driver for these licenses and the exemption from the SPPI for license holders, has been to encourage farmers who slaughter small volumes of livestock on farm to do so in a legal, licensed manner rather than ‘underground’ – this allows some oversight of, and education about both food safety and waste disposal practices that is not possible otherwise – for these reasons [the Ministry of Health] supports maintaining the current exemption afforded for small volumes of slaughter waste and reducing the regulatory burden on small producers”

Response Form Question 7.2: : Do you have any comments or suggestions regarding appropriate requirements for on-farm composting of mortalities and slaughter wastes (see intentions paper section 5.6B)?

Many respondents commenting on this topic advised the ministry to “work closely with composting experts to determine best practice based on cost and efficiency” as well as to “harmonize” any changes with other existing and related federal and provincial regulations (such as the Slaughter and Poultry Processing Industry Code of Practice). Some respondents however, expressed concern that “harmonization of AWCR requirements for on-farm disposal of mortalities with SPPI COP will likely leave a large number of particularly smaller livestock operations without a legal, affordable means to dispose of mortalities”.

Some respondents commented, for example, that “no distinction should be made between input materials in composting and all compost should be tested before use or sale”. In contrast, other respondents recommended that “slaughter waste composting should be distinct from regular agricultural waste composting”. A number of respondents cautioned that “composting does not meet minimum agriculture quarantine control requirements as defined under federal regulations”.

Several respondents suggested that “the definition of ‘high risk areas’ as proposed [by the ministry] be revised, and under such revisions only those operations in ‘high risk areas’ be asked to prepare a plan for waste management”. Respondents also commented that the “current exemption... is fair and reasonable for any area outside the lower mainland and other high rain fall areas where human population is high”.

Additional comments provided by respondents included:

- “Greater results could be obtained through education and outreach”
- “Setbacks do not consider local conditions and may be unnecessary to protect the environment in many cases”
- “The existing setback requirements coupled with the requirement that on farm burial does not cause pollution is an adequate regulatory framework”
- “Consider increasing [setback] distances to 100 m for both (domestic water and water course) as in Alberta’s Destruction and Disposal of Dead Animals Regulation”
- “In many locations, on-farm composting or burial of mortalities is now the only way to dispose of livestock... as municipal landfills are increasingly reluctant to accept carcasses and/or transportation is not easily available and too expensive”
- “Retaining a [qualified professional] QP to design a landfill site is unaffordable for the majority of farmers”
- “Distinction between 30 tonnes per year of solid waste from red meat and 10.5 tonnes per year of solid waste from poultry waste appears to have no scientific basis”
- “Considerable leachate can be generated during the curing phase which can contain SRM, Salmonella, E. coli, nitrates etc. – the compost in the active phase should be on an impermeable surface and under a roof – SRM compost should not be applied to agricultural land as it takes the land out of production, as animals are not permitted to graze it for 5 years and it cannot be used to grow food crops for human consumption for an unstated time span according to ‘code’ ”

Response Form Question 7.3: Do you have any comments or suggestions regarding appropriate requirements for on-farm burial of mortalities and slaughter wastes (see intentions paper section 5.6C)?

Many respondents commenting on this topic felt that “burial of mortalities and small amounts of slaughter waste can be easily achieved without causing environmental damage [in most rural BC farms and ranches located outside of high rainfall areas]”. Respondents pointed to existing federal and provincial legislation as providing sufficient guidance for on-farm burial of mortalities and slaughter wastes. Several respondents also commented that proposed requirements regarding maximum number of animals per burial pit and minimum distance above seasonal high water table are overly stringent commenting, for example, that “regulatory requirements in Alberta, Saskatchewan, Newfoundland and Labrador, and Ontario... specify [burial pit depth] minima in the range 0.9 to 1.4 m [rather than 4 m above a seasonal high water table]”. A number of respondents also recommended sufficient flexibility in setback distances “to accommodate very small (e.g. one acre) and oddly shaped farms”.

Additional comments included:

- “Suggested standards for disposal are appropriate in specific areas due to soil conditions and the proximity of the water table level, however are not appropriate in rural or remote areas”

- “Burying dead stock above the water line is impossible on the coast during most of the year. And there are no disposal facilities available”
- “AQC plant is able to handle specified risk materials for burial subject to applying an additional set of methods”
- “Please ensure that all the siting and setback requirements of the Slaughter Code, Section 10, regarding landfilling are used for the new burial standards of AWCR”
- “There needs to be more said about NOT attracting wildlife to burial sites”
- “Small acreages, especially in rural communities, with non commercial, low impact horse operations should have their own guidelines”

Response Form Question 7.4: Do you have any comments or suggestions regarding appropriate requirements for on-farm incineration of mortalities and slaughter wastes (see intentions paper section 5.6D)?

Many respondents commenting on this topic expressed support for the use of on-farm incineration of mortalities and slaughter wastes noting, for example, that “modern incinerators burn hot and clean with little emission and no visible smoke” and “incineration is still the best and safest disposal method”.

The predominant issue raised by a number of respondents regarding appropriate requirements involves setback distances. One respondent, for example, commented that: “the fact that today's incinerators do not emit smoke or smell made this a viable alternative for our farm – your policy paper says my incinerator must be 500 meters from residences and 1000 meters from school... this simply cannot be done – I would guess that most farms in the Fraser Valley would not comply with this regulation”.

Additional comments included:

- “Provincial approval of an incineration system should override local government on ALR land”
- “The cost and hassle to most producers to own an incinerator as well as maintain and monitor it is too great to make the proposed regulations realistic”
- “Appropriate to consider venting requirements if incinerations is done on a large scale”
- “Number of adjacent residences should be taken into consideration ... should differentiate between the concentration of dwellings as well – rural vs. urban”
- “Health Protection Branch supports the use of the specifications in the incineration Fact-Sheet, including the exclusion of the owner's residence from setback requirements”
- “I would like to ask why Canadian regulations do not regulate the disposal of incinerator ash, as the European Commission has for decades”
- “If the AWCR revisions for incineration are based on the siting, setbacks and operation standards of the Slaughter Code it would be a great improvement on the present regulations, which are dangerous”

Response Form Question 7.5: Do you have any comments regarding the proposed phase-in dates for on-farm disposal of mortalities and slaughter wastes requirements?

A limited number of responses were received on this topic. Several respondents noted their “agreement with intent” commenting, for example, that “some amount of lead time would be advisable”. Another respondent felt that “more time [is needed] to phase all of it in” and recommended “extend[ing] the rules that are already [in place] for the slaughter industry”.

8. Access to water in feeding areas

The ministry is proposing revisions to the regulation that will define livestock grazing and seasonal feeding areas and will set requirements for access to watercourses (see intentions paper section 5.7).

Response Form Question 8.1: Do you have any comments or suggestions regarding appropriate regulation of livestock grazing, protection of watercourses and identification of grazing, seasonal feeding and high risk areas?

This topic generated extensive comment and discussion from respondents. Many respondents noted that while it is desirable or appropriate to restrict livestock access to rivers and streams, “all animals including livestock require a clean and abundant water supply to survive”. Respondents noted efforts by agricultural sector organizations to work with the Ministry of Agriculture and other stakeholders to address concerns regarding livestock access to water. Several respondents suggested that concerns outlined in the intentions paper can be addressed through Environmental Farm Plans and/or modernization of the *Water Act*. Considerations to be balanced identified by respondents included: “costs of construction and maintenance [of fencing]”; “hazards to wildlife”; and “[impacts of] crowding in watering areas [in contrast to]... [allowing livestock] free access to water”.

Respondents raised concern or requested clarification about several aspects of the regulation, including: “definition of ‘high risk areas’”; “how [requirements] would address issues in areas designated as high risk”; and “definition of ‘watercourse’”. A number of respondents also expressed concern of contamination of watercourses from municipal or other sources, and the impacts on water supply for livestock or other farming operations.

Alternatives to direct access to water sources suggested by respondents included:

- “Fence or portable panels to be able to drink without wandering into the water course”
- “Use of solar powered water system [which on our operation] has reduced cattle drinking from unfenced water sources by up to 90% or more”
- “[Deal] with through EFP [Environmental Farm Plan program] on a site by site basis to allow for individual circumstances and conditions”
- “Consider encouragement of producers to move towards more free range livestock as opposed to highly concentrated intensified operations” as “crowding in these watering areas is more damaging to the environment than free and larger access areas”

- “DFO [Federal Department of Fisheries and Oceans] habitat have been working closely with farmers to allow limited access to water through use of exclusion fencing”
- “Hydraulic water rams in streams work well to pump water to adjacent water troughs. Small windmills have been used successfully to pump water into troughs from groundwater wells and lakes”

Additional comments included:

- “Education and awareness along with incentives does more to protect the environment than red tape and regulation”
- “Government should be funding alternatives to on stream watering (where ever it is practical) at a higher level than is currently provided through the EFP [Environmental Farm Plan program]”
- “Not applicable to cattle feeders”
- “We believe that municipal waste and industrial activities (i.e., Oil and Gas industry fracking) pose a greater threat than the agriculture industry to BC’s waterways”
- “It has been proven in the US that proper grazing of riparian areas with livestock access to water has actually improved water quality and soil quality due to improved root mass”
- “There should be recognition of historical use of watercourses for livestock water and amendments made to the *Water Act* regulations to allow for that same historical volume of water to be diverted to supply off-stream water”
- “There should be no access watercourses from confined livestock areas”

Response Form Question 8.2: Do you have any comments or suggestions regarding the ministry’s proposal to include confined livestock areas in the definition of a “storage facility” with associated requirements?

Almost all respondents who commented in this topic expressed “significant concern” or “opposition” to the ministry’s proposal. Respondents commented, for example, that “confined livestock areas are not storage facilities and should not be defined or treated as such”. Concerns raised by respondents included the “practicality” of berthing and covering confined feeding areas such as winter feeding areas, calving areas and weaning areas; increased costs and impacts associated with increased concentrations of animals; and difficulties in regulating temperature and ventilation of covered areas.

Response Form Question 8.3: Do you have any comments regarding the proposed phase-in dates for access to water in feeding areas requirements?

A limited number of comments were received on this topic. Respondents who did comment differed in their advice to the ministry. Some respondents suggested that phase in dates should be reduced commenting, for example, that “dates for limiting livestock access to watercourses in high risk areas should be reduced to 2 years in both the Fraser Valley and the Interior

(especially the Okanagan) – also in confined year round areas there is no good reason for it being more than 2 years”; and “the phase in date should be no longer than 3 years for high risk areas and no longer than 5 years for moderate risk areas”. In contrast, other respondents commented that “there needs to be much more consultation before these dates are set” or that “more time [is needed] to implement [any new requirements]”.

9. Land application of agricultural wastes and by-products

The ministry’s intention is to provide clear and consistent guidance for “general requirements” involving land application of agricultural wastes and by-products while encouraging good judgment through, for example, effective nutrient management planning (see intentions paper section 5.8).

Response Form Question 9.1: Do you have any comments or suggestions regarding the ministry’s proposed general requirements and revisions governing all land application of agricultural waste and by-products?

Several respondents commenting in this topic expressed concern that “the proposed requirements amount to micro-managing the farm business” or that “if government regulations make the utilization of these materials too onerous, farmers will opt to buy their nutrients in the form of commercial fertilizers” which “seems counterproductive” and that “everything should be done to encourage crop producers to choose to use this source of nutrients”. Many respondents commented that “manure [should be considered] as a vital natural resource... rather than a disposal problem”. Respondents who expressed support for more explicit regulation commented, for example, that “regulations should be stronger than ‘guidance’ - relying on ‘Best Management Practices’ has not been adequate to date”.

A number of respondents suggested that restricting application of agricultural waste and by-products during certain times of the year “is too ambiguous, particularly in a province such as British Columbia which has numerous bioclimatic regions, a wide range of agricultural commodities and significant difference in the growing conditions and growing season”. Respondents commonly requested “flexible” requirements or education and guidance documents rather than “rigid regulation[s]”. For example, respondents commented that “Nutrient Management Plans should not be mandatory but greatly encouraged – Environmental Farm Plans should be used to determine when a NMP is necessary”.

Comments from respondents on the topic of application requirements or guidance included: “should be restricted to the growing season and to amounts that are crop available”; “[use] caution [when] utilizing blanket statements, such as no spreading in windy conditions”; “there are wide variations of seasonality from year to year”; “90 days before harvest [would be] hard to monitor”; “difficult if not impossible to enforce”; “tighter restrictions on land applications are definitely needed”; “land spreading should be modified to require incorporation of the waste material in the soil”; and “good in principle but complicated in practice... a risk-based approach is relevant here”.

Additional comments included:

- “[The] Water Act already states that – no land application beyond the farm’s property boundary or in a manner that allows runoff beyond farm’s property boundary – therefore buffers and setbacks should be included”
- “There should not be a buffer or setback distance”
- “Soil tests [are not needed]... when it is abundantly clear that the land needs the inputs”
- “Banning manure for fertilizer only promotes the use of chemicals that do not condition the soil”
- “Any cities or towns that dump their sewage on agriculture land should meet the same guidelines”
- “Organic farms already use nutrient management planning and certified operations pay for annual inspection”
- “Support the continued work of the Nutrient Management Committee to address this complex issue”
- “[The ‘no application beyond property boundary’ requirement] is restrictive and does not provide for the ability of farmers’ to sell their nutrient to neighbours and/or spread of nutrients on leased or rented land”

Response Form Question 9.2: Do you have any comments or suggestions regarding requirements addressing manure application on crops grown for human consumption?

Almost all respondents who commented on this topic expressed agreement with the intent of ensuring consumer health and safety with respect to the application of manure on crops grown for human consumption. Respondents differed however, in their view of what requirements are needed to ensure such safety. Related comments included: “it has always been Good Agricultural Practice to cease application of manures 120 days before any crop is harvested”; “90 days is longer than many growing seasons ... too restrictive”; “90 days for raw manure – this also conforms [with] the Organic Standards”; “depends on the crop – lettuce one thing, corn another”; “application of Class B bio solids (treated and de-watered human waste)... should have the requirement of no human consumption for at least 18 months for above ground crops and 36 months for below ground crops after the last application”; “well composed manure is not a detriment to crops or human health”; and “expert recommendations on the ideal interval between manure application and harvest of grain products may be shorter [than 120 days]... on cereal crops such as barley, for example, which has approx. a 75 day growing season, such a regulation would not be reasonable”.

“Additional comments included:

- “No manure should be applied without first having been treated by direct-injection steam”
- “Equine manure from horses has little value and mainly wood so this should be disallowed for all fields”
- “Language should be strengthened to avoid indirect discharge to groundwater or surface water if that poses a risk to either’s water quality”

Response Form Question 9.3: Do you have any comments regarding the proposed phase-in dates for agricultural waste and by-products application requirements?

A limited number of responses were received on this topic. Several respondents commented that further consultation or “rewriting [of any new requirements]” is needed before phase-in dates should be considered. Other respondents, in contrast, commented for example that “there are already BMPs [best management practices] and manure spreading advisories in place, why not adhere to them now?” One respondent suggested a “priority area approach... [with faster implementation in] areas already experiencing high impact”.

10. Nutrient management planning

The ministry is proposing that all agricultural operations who land apply agricultural wastes, by-products or other nutrient sources be required to undertake nutrient management planning to ensure that land application of nutrients from all sources (e.g., manure, composted materials and supplemental nutrients) do not exceed the crop requirements (see intentions paper section 5.9).

A. Risk-based approach (see intentions paper section 5.9 A)

Response Form Question 10.1: Do you have any comments or suggestions regarding factors and criteria (such as geography and/or farm size) that could be used to identify and differentiate agricultural operations that may pose a higher risk to the environment?

Many respondents addressing this topic expressed support for a risk-based approach to proposed changes. One respondent, for example, commented that “we applaud the Risk Based Approach to Nutrient Management Planning and believe that such a Risk Based Approach should be used for all of the proposed changes in this intention paper”. Some respondents however, requested further clarification or consultation on “definition of ‘high risk’ ...[and the ministry’s intentions]”.

Respondents provided many detailed comments and suggestions regarding appropriate factors and criteria for differentiating farming operations. Commonly, respondents recognized that high precipitation areas are of particular concern however, some respondents cautioned that “factors or criteria should go beyond just total rainfall” or that some types of farming operations may be unfairly impacted by overreliance on a limited set of criteria. For example, one respondent noted that “all cranberry acreage [would be considered] as high risk (i.e. located in high precipitation regions of 600 mm/yr or greater)” and “funding [should be] available to assist farmers with the creation of nutrient management plans using EFP Program Extension Specialists”.

Specific comments or suggestions included:

- “Farms adjacent to water bodies... [and] in low-lying marshy area that drain to streams and other water bodies [may be considered a higher risk than farms in drier regions/areas]”

- Producers who refuse to follow environmentally safe practices should be targeted rather than the entire population of agricultural producers – of whom the majority take into account environmentally sound, and cost effective nutrient management”
- “Nutrient management planning might play an important role in certain areas of the province while in other areas, it might be irrelevant depending on the circumstances and factors”
- “Consider whether farms follow a 3rd party verified program such as an EFP or organic certification and that these programs be considered as indicators of good environmental farm management and thereby lower the risk level”
- “[Species at Risk (SAR)] should not be a criteria – all of BC would be considered a high risk area if SAR is used as a criteria”
- “Size of farm is less important than its geography and operational type”
- “Milking over 1000 cows is higher risk”
- “Large, industrial farms (broiler, layers, dairies) which produce large quantities of manure especially on small acreages [could be considered higher risk]”
- “Production methods should be considered a risk factor”
- “Extensive operations generally operate with more experience and have a far larger land to livestock ratio than smaller ones and therefore should have more flexibility”
- “A livestock operation that produces 30 tonnes of agricultural waste would be considered a small agricultural operation in most jurisdictions”
- “Encouragement of adhering to the EFP and Salmon Safe will go further than enacting more regulations”
- “Why are you not concentrating on the areas in BC like Osoyoos that have this problem rather than burden ALL?”
- “Would both a criterion associated with Geography/Climate and a criterion associated with Size/Intensity be needed for determining a high risk area?”
- “[All farm operations] should all be treated equally – there should be no differentiating”
- “Lower mainland poses a much higher risk for pollution because of the higher population and soil type”
- “Impact on human health in heavily populated areas is another factor”
- “Individual historical non-compliance must also be taken into consideration”
- “Look more closely at other forms of pollution as probable contributors, and not single out the agricultural industry”
- “Would like to see the addition of farms with riparian areas as high risk”

B. Nutrient application assessment (see intentions paper section 5.9 B)

Response Form Question 10.2: Do you have any comments or suggestions regarding use of a nutrient application assessment screening tool to determine appropriate nutrient management planning requirements for agricultural operations?

Many respondents who commented on this topic supported use of a screening tool while commenting that use of a screening tool “should be encouraged but not mandatory”. A number of respondents expressed concern that requirements for use may be “heavy handed” or “not appropriate for small farms and largely organic operations”. Related comments included “if this tool is applied fairly across the province it should work”, “this might be useful” and “this has been used successfully in other jurisdictions”.

Comments pertaining to the function of the tool included:

- “If the screening tool indicates low risk, no ‘minimal records’ should need to be kept”
- “Use GAP [good agricultural practices] and BMP [best management practices] as established by specific agriculture sectors”
- “Screening tool must also include the intended application of fertilizer … and should be field specific rather than farm specific”
- “Emphasis on having good quality information (e.g. groundwater conditions etc) on which to make decisions”
- “Should be easy to use – calculation should be transparent and an explanation of how it makes determinations and on what criteria should be available”
- “Nitrogen seems to be cited as the major problem yet it is the least stable of all the nutrients in testing”

Additional comments included:

- “[Use of the screening tool] should assess the risk posed by the waste in low risk areas – farms in high risk areas must be required to prepare and follow the NMP [nutrient management planning] and have it monitored by qualified unbiased professionals”
- “The ministry [should] publish general guidelines and maximums, while if an individual has reason to exceed maximums, the use of screening tool and NMP would be appropriate”
- “If the MOE feels there is a legitimate concern … work with the industries in the area to mitigate the concern”
- “More appropriate for large monocultures than for smaller mixed operation whose nutrient needs can vary every 20 meters in a field… not appropriate for small farms and largely organic farm operations”
- “Confined livestock operations should not be considered high risk based on size alone”

Response Form Question 10.3: Do you have any comments or suggestions regarding nutrient management planning requirements for agricultural operations in areas identified as “high risk”?

A number of respondents commenting on this topic repeated their concern that under the proposed criteria too many farming operations or “too much of BC” could be considered as “high risk” with the associated nutrient management planning requirements being too onerous or not necessary. Related comments included: “high risk should only apply to high precipitation or areas that have high water tables and/or have soils with high permeability”; and “not appropriate for small farms and largely organic farm operation[s]”. Several respondents suggested “revision of criteria for determining ‘high risk’ areas” to better reflect geographic, climate and other variation.

Many respondents made reference to the Environment Farm Plan program and nutrient management planning under the program. Related comments included: “all operations should follow nutrient management planning requirements”; “this is an education piece for most farmers”; “should be part of an environmental farm plan – stop duplicating rules and regulations”; and “need to consider a whole farm nutrient budget approach”.

Comments from respondents expressing support for nutrient management planning requirements included: “should be mandatory and enforced – violations should carry significant penalties”; and “the amount of manure applied to land [should] be regulated – many large dairy farms are applying way too much manure [to be considered]... a fertilizer”.

Response Form Question 10.4: Do you have any comments or suggestions regarding requirements for and/or certification of custom applicators for specified situations (e.g., agricultural operations in areas identified as high risk)?

Respondents commenting on this topic raised differing points about certification of custom applicators. While a number of respondents commented that this is “a good idea” or “possibly appropriate” other respondents felt the requirement would be “unneeded”, “red tape” or “[an unnecessary] financial burden on the farmer”. One respondent commented, that “having custom applicators prepare NMPs and then apply the manure/fertilizer will open up conflict of interests and may result in over fertilization – even if all parties are certified”.

Additional comments and suggestions from respondents included:

- “Good idea as long as this training is made available for anyone who would require it”
- “Must have equal application of laws to both farmers and applicators ... loophole if you don’t require applicators to manage manure same way as farmers”
- “Could be given educational seminars on BMP and areas identified as problematic”
- “Manure/compost is an organic, natural compound, and is not a hazardous material” and “as the risk is low, there is no need for the unnecessary costs” and “not necessary as environmental impact is low”
- “We agree [with] certification, but would like input into parameters”

- “[Our organization] opposes the use of having a qualified professional prepare any potential nutrient management plans because this would create another consider[able] financial pressure”
- “Consider use of BMP and EFP instead – educate agriculture personnel on effective ways to protect water and land”
- “Follow the rules already in place”

Response Form Question 10.5: Do you have any comments regarding the proposed phase-in dates for nutrient management planning requirements?

Many of the respondents who commented on proposed phase-in dates provided overarching comments, such as: “cannot be phased in until stakeholders are given more input”; “we would like to see regulations before finalizing a phase-in date”; “[our organization] suggests that the ministry publish its intent to have further and ongoing discussions with producers... in order to dispel... concerns [before establishing phase-in dates]” and “a proper phase in time and training time for farmers and professionals is required”.

Specific comments on phase-in dates for nutrient management planning requirements differed. Some respondents commented that they “agree with intent” or that “1-2 years [phase in for] nutrient management plan... is sensible”. Other respondents, in contrast, felt that “[farmers] cannot be expected to have a viable NMP in place within 1-2 years”, that “training time for farmers and professionals is required” or that “[time is needed] to react [as] these changes require a fundamental changes to agricultural operations”.

11. Monitoring and testing

The ministry is proposing monitoring and testing requirements based on level of risk to the environment (see intentions paper section 5.10).

Response Form Question 11.1: Do you have any comments or suggestions regarding monitoring and testing requirements for agricultural operations in “low risk” areas?

Many respondents commenting on this topic expressed concern that monitoring and testing requirements are “not needed” and would place a financial and compliance burden on farmers. Several respondents commented that the proposed criteria for identifying “high risk” areas are overly stringent leaving “virtually no low risk commercially viable operations in British Columbia”. Other respondents, in contrast, commented that “even in low risk areas, field[s] may become high risk... it is prudent to have one monitoring and testing schedule for all fields that receive nutrients”.

Specific comments and suggestions included:

- “[Monitoring and testing should be] simple and not time consuming or expensive”
- “Put money toward ‘Agriculture Engineers’ who can develop practical farm specific solutions to actual real problems”

- “Maps are already available for agricultural areas of the province that will indicate the soil types, permeability, aquifers, and precipitation. If an area does not have proper mapping it should be the government’s responsibility to make sure the mapping is done”
- “It is more prudent to have one monitoring and testing schedule for all fields that receive nutrients, unless the Dutch model is followed with pre described maximum applications of nutrients and accounting is done based on the number of animals on the farm at a certain date”
- “We encourage the province to conduct or fund regional water quality monitoring programs in the Fraser Valley”
- “At most, require annual testing for soil nitrate at times of the year determined by an agrologist”
- “There are not enough labs available to do the testing required”
- “There should be more flexibility and clarity with regards to when the ‘baseline’ soil test can be taken”
- “More important than the soil test values themselves are the interpretations of the results”
- “Resources would be better spent to ensure fields are divided adequately into spatial units for soil sampling than sampling as frequently”
- “In cases of high risk, it would be more valuable to test the manure/soil amendment more frequently rather than test soils every spring and fall”

Response Form Question 11.2: Do you have any comments or suggestions regarding monitoring and testing requirements for agricultural operations that are responsible for preparing a nutrient management plan?

Respondents commenting on this question frequently reiterated points raised in response to question 11.1 (monitoring and testing requirements for operations in low risk areas). Several respondents suggested that additional monitoring and testing requirements are not needed as these would be part of a nutrient management plan. Respondents also commonly commented that “if a NMP and EFP [are]... followed, it is not necessary to soil test every year”. One respondent, for example, noted that “since the introduction of the nutrient management planning component of the environmental farm plan program, producers have had access to analytical services for soil, manure and compost testing – for those who have participated in the program, this service has given them additional information regarding nutrient levels of their soils and assisted in determining appropriate commercial fertilizer and manure application rates”. The respondent suggested that “any regulatory requirement to conduct monitoring and testing will change the producer’s perspective... this would reduce the effectiveness of nutrient management plans”.

Specific comments and suggestions included:

- “Where the problems are occurring ... work with the industries in the area to mitigate the concern”

- “Encourage land owners to be a part of the EFP that addresses this”
- “Only appropriate for large/intensive operations”
- “Include anyone working agriculture land [in the requirement] not just farmers... also cities”
- “Only necessary in high risk areas”
- “Put the money toward ‘Agricultural Engineers’ who can develop practical farm specific solutions to actual real problems”
- “Base load from wildlife and domestic pets, city storm run off must also be factored in”
- “Better results are obtained by education and outreach than by regulation”
- “Nutrient plans should be a responsibility of our District Agriculturalist ...maybe a few more [District Agriculturalists]... could help with the pressure of all these regulations”
- “Person preparing the NMP should be unbiased... by using qualified unbiased professionals there will be consistency between similar type farms”
- “An important selling feature of these NMP programs would be consistent enforcement so that no one can flaunt the rules or be seen to be ‘riding under the radar’”

Response Form Question 11.3: Do you have any comments or suggestions regarding monitoring and testing requirements for agricultural operations in high risk areas?

Respondents commenting on this question frequently reiterated points raised in response to question 11.1 and 11.2. Several respondents expressed concern that under the criteria listed in the intentions paper “too much” of the province or “almost all commercially viable agricultural operations” would be considered “high risk”. Respondents also commented that additional requirements would be “onerous for small farms, who should be exempted”. Several respondents suggested that “[government] should hire staff to do the work and don’t put the onus or cost on farmers”.

Specific comments and suggestions included:

- “If the presence of one or more red or blue-listed species makes an area a high risk area, almost the entire province is high risk area”
- “Agreeable with further consultation”
- “Unnecessary beyond what is Good Agricultural Practice”
- “High risk areas should be near large or significant populations where there is large agri businesses who have morality and can afford to employ people to meet all the regulation requirements that they require for factory farms”
- “If the MOE feels there is a legitimate concern around leachate from an agricultural area ... conduct tests to determine where the problems are occurring and then work with the industries in the area to mitigate the concern”
- “Requirement could be applied to those with excessive nutrients who would be likely to pollute”

- “Fall testing would give a better indication of what nutrients remain in the soil following the growing season and what proportion would have been used by crop”
- “Soil samples should be taken in both spring, prior to planting and fall after the last crop is harvested”
- “Where soils are coarse, soil samples should be taken down to 30 cm to detect nitrates”
- “Recommend mandatory use of an unbiased sample collector and an unbiased qualified professional to manage and monitor”

12. Record keeping

Response Form Question 12.1: Do you have any comments or suggestions regarding proposed record keeping requirements (see intentions paper section 5.11)?

Many respondents commenting on this topic expressed concern that requirements for record keeping could be undue or overly complicated. A number of respondents commented that a requirement for maintaining records for a period of ten years is overly long, for example, “a period of four years... is more manageable” and “CRA only requires seven years, why ten years?”

Several respondents recommended that “record keeping should be encouraged but [not mandatory]”. One respondent noted that “when the environmental farm plan program was first introduced in BC in 2005, an assurance was given by government to farmers and ranchers that individual farm information would be kept confidential and would not be distributed to government agencies and regulators ... this commitment by government appears to have disappeared... concerns [among farmers] that test results will be used by the ministry to enforce compliance introduces moral hazard for producers... a requirement to keep records for Ministry inspection can have the undesirable consequence of reducing the effectiveness of nutrient management planning on farms”.

Comments from respondents who supported proposed record keeping requirements included: “high risk areas should be submitting monitoring results to the ministry”; records of applied synthetic fertilizer (rates, type, strength) should be part of the NMP requirements – it is not only manure and by-products that are causing over-fertilization, leachate and runoff”; and “the circle needs to be completed... records must be used to guide applications for the ensuing year”.

13. Additional considerations

A. Emerging technologies and treatment options (see intentions paper section 5.12 A)

Response Form Question 13.1: Do you have any comments or suggestions regarding emerging technologies (such as anaerobic digestion or alkaline hydrolysis) and how they could or should be addressed in the revised regulation?

Comments on this topic varied from very definite “we have studied this extensively and it is just not financially feasible in BC” to “emerging technologies should be offered some leniency”

and “let farmers and lab people work this out without interference”. One respondent cautioned, for example, that “not all emerging technologies will be beneficial to the environment or industry they addressing, so at least some general acceptance and guidelines should be in place to allow for these to develop”.

Specific comments and suggestions included:

- “A well structured MOE extension program could be developed to introduce these emerging technologies into all the major industries in BC”
- “No new regulations should be contemplated without nonbiased scientific data which clearly identifies that a real issue exists and that the proposed new regulation must be vetted/evaluated through the Province’s regulatory reform policy”
- “Consider [dedicating] a portion of the revised regulation to... commercial anaerobic digestion and alkaline hydrolysis operations”
- “It may be necessary to develop emerging technologies regulations as more about each individual technology becomes known”
- “The AWCR must be all-encompassing rather than selective on manure and compost”
- “These could be addressed through special permits that would have operational requirements included”
- “Definitely address emerging technologies as there is tremendous impact on local Government with respect to the ‘Not In My Backyard’ syndrome”
- “Spent growing media needs to be defined accurately”
- “Clean Farms is developing stewardship program that may be able to manage all suitable waste generated on farms”
- “Emerging technologies should not be specifically address[ed] under the AWCR – it should be stated that notice should be given to the Ministry Director prior to the construction and operation of an emerging technology for approval and review”
- “Alberta is considering including provisions in its animal disposal regulations to legalize emerging carcass disposal technologies”
- “Our experience with anaerobic digesters is that the nutrient balance of farms is jeopardized and the profitability of the enterprise is pushed by accepting more waste to earn more tipping fees”
- “A general concern would be to ensure that emerging technologies do not produce effluent or ‘treated’ waste that exceeds existing parameters for acceptable storage and release/discharge”
- “[Alkaline hydrolysis] is possibly a valuable tool that producers could use in place of conventional composting methods”

B. Sector specific requirements (see intentions paper section 5.12 B)

Response Form Question 13.2: Do you have any comments or suggestions regarding additional sector specific requirements that could or should be addressed in the revised regulation?

Respondents who commented on this topic often indicated support not only for sector specific requirements but also geographical and waste specific guidance. Examples of comments included: “the entire regulation needs to be based more upon regional and sector specific requirements … as factors vary so widely throughout BC” and “special provisions need to be added for sector specific wastes”.

Several respondents suggested specific provisions for organic operations “giving them [the option] of providing a copy of their certification documents [in lieu of other requirements]”. Respondents also suggested that “large intensive farming practices/ factory farms… have the greatest potential for damage” and “are the real threat to health of all species and food security”.

Additional comments and suggestions included:

- “Government should spend more effort to promote sustainably produced, closer to home, locally grown, healthy, nutritional food”
- “Specific risk material containment and disposal”
- “We have found both wash water and growing media to be toxic to fish”
- “MOE should not be instructing farmers how to specifically run their operations”
- “EFP should be used to address sector specific impacts”
- “Drainage water from greenhouses … if not used on crops but let drain to a ditch or into the soil … may not be caught without an EFP review being conducted”
- “Use education to improve agriculture business owners’ knowledge of nutrient cycles ”
- “Regulation must also look at the other industry’s de-regulation that has been occurring over the last 10 years or so”

C. Regulating under a Code of Practice

The ministry is proposing that the current regulation be repealed and a code of practice (as a Minister’s regulation) be enacted to provide a consistent and updated regulatory underpinning for the regulation of agricultural wastes and by-products (see intentions paper section 5.12 C).

Response Form Question 13.3: Do you have any comments or suggestions regarding the ministry’s intention to repeal the existing regulation and establish a code of practice for the regulation of agricultural wastes and by-products?

A number of respondents commented that the “implications of the proposed change are not clear to us” and suggested that “it would be helpful if a discussion paper was released to

provide a clear rationale for a transition to a COP [code of practice] and why this may be preferable in achieving the ministry goals and what difference (if any) it may pose to the regulatory burden on agricultural operations".

Several respondents reiterated their concern that "a 'one size fits all' approach is not appropriate in BC" and/or that proposed requirements would be "needlessly costly and redundant". Respondents expressing concern commonly noted that "the existing regulation is sufficient and the proposed code of practice is unnecessary and will be a burden on farmers".

Specific comments and suggestions included:

- "We definitely need a new code of practice that is a regulation that can be enforced"
- "My observation ... tells me you need a code of practice rather than costly requirements"
- "OK if it brings clarity to the regulations for the producer and the MOE"
- "Big task but long overdue"
- "What was wrong with the old ones? Just enforce the rules"
- "COP should differentiate for high, medium and low risk operations"
- "BMP – all farms need to be farmed differently to be operated efficiently"
- "Changes of this scope and magnitude should go through the legislature to ensure a fair and honest debate"
- "Leave the existing regulations as is and address any individual challenges in a fair and practical manner"
- "Financial resources need to be put in place if all these changes are going to be required, for the benefit of all"
- "There must be very specific protocols for ensuring compliance and consequences for non-compliance"
- "Do not use this as an opportunity to outlaw many farms and create problems where none existed before"
- "[If the Code of Practice is] akin to a Building Code where compliance to the letter of the regulation is mandatory, regardless of performance, and where there is no appeal process other than through the courts, then we are emphatically and vigorously opposed"

14. Phase-in schedule for implementing the revised regulation

Response Form Question 14.1: Do you have any additional comments or suggestions regarding proposed phase-in dates for particular requirements under a revised regulation (see intentions paper section 5.13, table 8)?

Many respondents reiterated previous comments that "it is pre-mature to discuss the proposed phase-in-schedule" or that "individual proposed requirements have to be evaluated in terms of ... scientific evidence ... cost benefit analysis ... independent assessment of environmental effectiveness ... operational implications ... and additional factors".

A number of respondents expressed concern about the potential costs involved in meeting proposed requirements commenting, for example, that “the financial commitment required from livestock producers would be absolutely enormous if MOE enacted and enforced these proposed changes”; “farmers and ranchers will need a significant amount of time to secure the additional capital required for compliance”; “there is not money for capital investments that do not contribute to profitability”; and “[most operations] barely have enough finances for their operational expenses”.

Additional comments and suggestions included:

- “Attempting to make a regulation more easily accepted by having a phase-in period does not make the regulation better – use education and incentives to create change if change is required, not regulation”
- “Good management and stewardship practiced by many ranchers should be recognized and taken into account allowing for flexibility in applying any changes to the regulations”
- “We would recommend that communications of the changes be given some amount of lead time before the regulation is enacted”
- “There is an inconsistency between... the composting and curing site requirements [set out in the intentions paper]... section 5.5 states that proposed siting and setback requirements would be required as for agricultural waste storage facilities, not that composting and curing sites would have to comply with proposed agricultural waste storage requirements... there is also no requirement under section 22 of the Slaughter Code for composting sites to be covered, except in high rainfall regions and berthing is only required as necessary, it is not mandatory”
- “Who is going to do the review and inspections?”

15. Best management practices (BMPs)

The regulation is supported by guidance and direction related to practices and procedures for the management of agricultural waste and by-products (see intentions paper section 6).

Response Form Question 15.1: Do you have any comments or suggestions regarding development and use of guidelines and/or best management practices for the management of agricultural waste and by-products?

The development and use of guidelines and/or best management practices received wide-spread support from respondents with the expressed desire that programs such as “Environmental Farm Plan, Biodiversity Plans, and the BC Verified Beef Production Program should all be promoted, supported and properly funded”. Numerous respondents also suggested that “education, support and incentives that are regionally appropriate work a lot better than a one size fits all approach that is backed up by maze of red tape and costly regulations”. Respondents also commonly suggested that “assistance from the Ministries of Agriculture, Forest and Range, and the agriculture industry should be elicited to develop BMP’s”.

Several respondents commented, for example, that: “farmers are already using best management practices by using common sense and what is best for their business”; and “farmers... are stewards of the land”.

Suggestions and comments included:

- “Help farmers with workshops and if necessary grants to comply”
- “Better to avoid prescriptive regulations and instead enable the Ministry to do spot checks”
- “EFP and Best Management Practices developed in consultation with producers are the most efficient and fairest vehicle”
- “Should be farm specific, climate specific and region specific”
- “[A] current problem with Agriculture BMPs is that uptake and proper implementation is near impossible to track”
- “MOE and Ministry of Agriculture already have some BMPs and guidelines available – have you found that these guidelines are used and valuable to farmers?”
- “Must allow for growth and flexibility to adapt to changing economic and environmental conditions” and “We caution against defining BMPs through laws, regulations etc that cannot be adapted or modified except through an arduous political mechanism”
- “Outreach and education is always beneficial”
- “Increasing the incentives to progressive companies with new ideas that need funding to get going (grants) based on merit could move new technologies from good ideas to beneficial technologies quicker and with less hassle”
- “Should be completed and released with consideration to the limited resources of small food producers and water system operators”
- “The Ministry should do ‘spot checks’ and then do a better job of tailoring the regulations to reality”
- “Need to be written as regulations to be followed rather than just guidelines of normal farming practices”
- “Should be enforceable under law and needs much more oversight, monitoring and enforcement”

16. Consultation with First Nations

Response Form Question 16.1: Do you have any comments or suggestions regarding consultation with First Nations with respect to proposed revisions to the AWCR (see intentions paper section 7)?

A limited number of comments were received in this topic. Respondents suggested that First Nations should be consulted if proposed requirements pertain to “First Nations land” or if “their agricultural operations will be affected”. Other comments included: “we should all be treated equally”; “only if they are a stakeholder in any of the operations governed under the

legislation”; and “water quality on First Nations is often considered to be some of the worst in the province, and is often associated with raw sewage or septic tank outflows, or pens for pet horses being placed upstream from water intakes or wells”.

17. Assuring compliance

Section 8 of the intentions paper outlines ministry intentions addressing awareness and compliance promotion, as well as compliance verification and enforcement, of the regulation.

Response Form Question 17.1: Do you have any comments on or suggestions for the ministry to support awareness of and compliance with the regulation?

Many respondents reiterated comments made previously recommending, for example, that the regulation should be “formulate[d] so that people want to comply”; that the ministry “work with producers, agriculture organizations, industry sectors and other agencies... to increase awareness [and support and compliance]”; and that “understanding regulations and requirements are a necessary prerequisite to compliance”. Respondents also suggested “promoting the Environmental Farm Plan”; “education using short courses, media, meetings, newsletters etc.”; and “as a last resort, fines may be necessary if there is lack of compliance and/or regulations have repeatedly been violated”.

Suggestions and comments included:

- “Fix what we have – don’t reinvent the wheel”
- “Recognize those that do comply with an award, [such as] a sign, quality certificates or some other type of recognition for a job well done”
- “If you want people to comply then come up with financial assistance programs”
- “[Requirements should be] written so they can be understood without having to repeatedly refer back to other subsections”
- “Any compliance and enforcement actions should be undertaken only by personnel experienced in the agriculture industry and... familiar with common agriculture practices”
- “Ensuring that technical support is available is critical”
- “If it is a bad rule people won’t try to comply with it”
- “There seems to be a need for more education on what is required and how farmers can actually come into compliance without breaking the bank”
- “Stress that more efficient waste management will save the farm money in the long run”
- “Non-compliance with regulation should come under the provision of the *Environmental Management Act – Part 10*”
- “How [will] a water purveyor be made aware when requirements are not being met and there is pollution?”

- “[Will] the agriculturalist be required to have a contingency or emergency plan for spills or pollution?”
- “The interaction [that] MOE will have with local government [will be important]”

Response Form Question 17.2: Do you have any comments on or suggestions for the ministry with respect to compliance verification and enforcement of the regulation?

This topic generated substantive comment from respondents. A number of respondents requested clarification “on the exact protocols of enforcement” or commented that that “more robust enforcement of existing regulations would be an effective way of improving environmental outcomes [rather than introducing new regulations]”. Respondents frequently advised the ministry to work with farmers through education and support (such as the Environmental Farm Plan program and financial incentives) to achieve environmental objectives rather than rely on “heavy handed” or “costly” regulation and enforcement. Several respondents also questioned whether the ministry had sufficient resources to effectively undertake compliance and verification and enforcement.

Comments or advice regarding effective compliance verification and enforcement included: “in the past, the MOE has agricultural compliance officers – not any more”; “employ staff at the ministry level who have worked on farms”; “penalize those responsible for bad business protocols – not the ones that comply, over regulating the good farmers”; and “if compliance is not occurring, fines may be necessary”.

Additional comments and suggestions included:

- “The success of these changes will require that compliance officers be hired and that NMP and storage facility plans will be reviewed – the government should set aside proper resources to support the proposed changes”
- “Examine other initiatives that have worked and copy (e.g. EFP)”
- “It should be the ministry’s responsibility to actually prove that leachate and runoff problems are from the individual agriculture producer”
- “We have significant concerns about the prudence of some of the proposed revisions to the AWCR – our support of enforcing revised regulations would therefore be tempered accordingly”
- “To verify compliance, the qualified professional should continue to monitor sampling procedures, tests results and management – water tests of nearby aquifers and watercourses ... comments and communications with neighbours and others affected by events at the farm should also be considered”
- “I don’t believe our economy or political system can afford to implement this”
- “Consider the costs to the Province of having inspectors personally visit every agricultural operation in BC that has over 5 head of large animal livestock”
- “Penalize those responsible for bad business protocols. Not the ones that comply, with over regulating the good farmer”

- “Object should be to have a compliant industry rather than the penalties”
- “Will MAg be able to enforce it as well?”
- “The law abiding farmer will incur major costs to implement these regulations while others will continue to proceed with status quo – no changes, because they face no consequences”

18. Protection of human health and the environment – meeting ministry objectives

Response Form Question 18.1: In your view, how effectively do the ministry's intentions and proposals for revising the Agricultural Waste Control Regulation address the ministry's objectives of protecting the environment and encouraging the responsible management of agricultural waste and by-products? What are the reasons for your choice? What suggestions do you have for the ministry to improve the effectiveness of the regulation?

Fewer than one third of respondents addressed this question. Respondents who felt that the ministry's intentions and proposals were “not effective” or had “significant gaps” outnumbered those who felt they were “quite effective” or “very effective” by about two to one.

Most commonly, respondents encouraged the ministry to undertake further consultations and discussions with agricultural interests to clarify intentions and develop understanding and support. One respondent, for example, commented that “I don't have any objection to the objectives and in fact concur with them – I haven't seen in this enough information to tell me exactly how this will impact me as a farmer to know if the regulation will be effective or not.”

Suggestions and comments included:

- “Current regulations are effective – just keep educating”
- “Education not fines and jails”
- “Testing plans and execution of plans through verification has to be simple and effective and not tie farmers down to inordinate amount of extra cost of continual testing and monitoring but clear guidelines for effective change”
- “The end goal of the protecting the environment through such regulations is great and much needed... there is a lot of scientific data in certain areas of the province that prove changes need to be made”
- “Some of the things said in this proposal are not practical and won't work”
- “Better to avoid prescriptive regulations and instead enable the Ministry to do spot checks”
- “Forget about using the presence of a species at risk as a criteria for a high risk area”
- “Include integration of the various regulations”
- “Clear definitions, earlier phase-in and enforcement protocol would ensure effectiveness”

- “Industry/sector buy in will be a problem and may require a risk-based approach (e.g., more vulnerable receiving environment – more stringent measures – screening assessment could work here) – incentives may be required to coax industry/sector buy in”
- “Exemptions are needed for smaller farms – [also] better definitions of risk factors”
- “Use the NMP for all crop producers/ landowners equally”
- “Will lead to more requirements for storage, more use of diesel to move this waste which increases our hydrocarbon footprint and increases costs – this leads to more transport of waste which creates more issues and therefore more regulations”
- “Let’s preserve farm land and encourage farmers to farm”
- “Most farms are in compliance with waste management as it is not considered a waste product. It is part of the NMP of a lot of farms and greatly reduces the cost of having to purchase commercial fertilizers”
- “[Our agency] supports MOE’s endeavour to collaborate with the province’s agricultural industry to determine amendments to the AWCR that can be practically applied and maintained by BC farms”

Response Form Question 18.2: Do you have any other comments or suggestions for the ministry regarding the regulation of agricultural waste and by-products?

Many of the respondents who addressed this question reiterated or summarized points or concerns expressed in previous questions.

Common comments or suggestions included: “further consultation with primary producers [is needed] to flush out the differences and misplaced intentions”; “we do need... some rules and regulations but this will be a huge impact on farmers”; “please consider further dialogue with organic farmers on this issue”; “one size doesn’t fit all”; “consider... at least... exempt[ing] small farm operations using organic practices and low input agriculture”; “[support and build on] the Environmental Farm Plan program”; “focus... on education of best management practices”; and “include the ability to grandfather existing structures in any proposed changes”.

Additional specific comments or suggestions provided by respondents included:

- “Why are there no policed regulations on the amount of chemicals used on conventional farms? This does not take into consideration the issue of risk posed by GMO crops which some scientist believe act like a virus in our environment”
- “The leaching of wood waste products is most abundant in the logging industry with its stump side logging practices – agriculture has been very vocal in trying to stop this type of logging as it is damaging to the environment and is not agriculture friendly... studies have shown that the contamination in the Coldstream Watershed is over 40% human, over 40% wildlife and only 2% agriculture”
- “Our tractors fuel efficiency beats any automotive improvement over the last decade – what has changed significantly is the amount of residential homes in the neighbouring areas – all

residents now drive at a minimum 2 vehicles – there is more pavement diverting contaminated water directly into creeks and lastly, how much has the effluent output from cities increased in the last 10 years?”

- “None of the waste material addressed in this discussion paper is an unnatural substance – when deer, for example, group together in the winter in herds of 200 or more, they create more waste than a small cowherd, yet any agricultural waste is being singled out as harmful to the environment”
- “Forcing us to try and fix a system that isn’t broken will only cause more of us to leave the agricultural industry and that is extremely detrimental to the generations to come”
- “The samples (Coldstream Creek and the Osoyoos Aquifer) provided are not representative of watercourses and aquifers throughout BC and are therefore not sufficient to demonstrate that broad based regulatory changes are required”
- “In demonstrating the need for new regulations, the inadequacy of the current regulatory framework should be discussed”
- “Notwithstanding the goals, the Intentions Paper consistently fails to make a link between specific proposed changes and government goals. It is insufficient to assume that a regulatory change will lead to an improved outcome”
- “The Government of BC has adopted a Regulatory Reform Policy that includes a Small Business Lens – Government policy requires that regulatory changes be evaluated accordingly – we note relevant criteria that need early attention: criteria 1 – Reverse Onus: Need is Justified; criteria 2 – Cost-Benefit Analysis; criteria 3 – Competitive Analysis; criteria 4 – Streamlined Design; criteria 6 – Results-Based Design; [and] criteria 8 – Time and Cost of Compliance”
- “As it currently reads, it doesn’t seem to me that the risks associated with a nursery operation are proportionate to the proposed solutions”
- “The mushroom operation where 3 persons died had qualified professionals signing off on various items – we have to be careful not to off load liability to qualified professionals for the few dollars that the farmer would be willing to pay them”
- “The Canadian Fertilizer Institute (CFI) is proposing that the 4R Nutrient Stewardship Best Management Practice system (Right Source @ Right Rate, Right Time, Right Place ®) be incorporated into the AWCR, specifically in sections 12, 13 and 14”
- “If the District (Whatcom County) could engender acceptance of only one recommendation it would be for the Ministry to more fully utilize the resources found in the Ministry of Agriculture”
- “A complimentary Synthetic Fertilizer Application Regulation should be developed”

- “Under Surface Water Quality, please add the following in Paragraph 2: ‘a. Blue-green algae can consist of ‘cyanotoxins’ or ‘cyanobacterial toxins’ – some blue-green algal blooms can be toxic or poisonous if swallowed by wildlife, livestock or people’ ”
- “Under Groundwater Quality, please revise paragraph 1 line 9 to include the following: ‘a. this is of particular concern in areas of high precipitation, irrigated croplands and livestock operations and over unconfined aquifers [and] b. the study listing as a link below describes nitrate impact to groundwater and domestic drinking water - <http://groundwaternitrate.ucdavis.edu/files/138956.pdf> ’ ”
- “Under Examples from Environmental Monitoring, note that Paragraph 1 line 10 should state that Kalamalka Lake is a primary source of drinking water for Greater Vernon area (approx. 35,000 customers)”

Appendix A: Acronyms and Abbreviations

Acronym or Abbreviation	Definition
ag	agriculture
ALR	Agricultural Land Reserve
AQC	Agriculture Quarantine Control facility
BC	British Columbia
BMP	Best Management Practices
BSE	Bovine Spongiform Encephalopathy (Mad-cow disease)
CFI	Canadian Fertilizer Institute
CFIA	Canadian Food Inspection Agency
CRA	Canada Revenue Agency
DFO	Department of Fisheries and Oceans
EFP	Environmental Farm Plan Program
GMO	Genetically Modified Organism
MOE	Ministry of Environment
MSW	Municipal Solid Waste
NMP	Nutrient Management Plan
OMRR	Organic Matter Recycling Regulation
QP	Qualified Professional
regs	Regulations
SPPICOP	Slaughter and Poultry Processing Industries Code of Practice
SRM	Specified Risk Material
US	United States