

# ALBERTA ENVIRONMENTAL APPEALS BOARD

## Report and Recommendations

Date of Report and Recommendations – March 11, 2011

**IN THE MATTER OF** sections 91, 92, 95, and 99 of the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12;

**-and-**

**IN THE MATTER OF** appeals filed by Kent and Ingrid Vipond, Bernie and Margie Brown, Robert and Lisa Cowling, Bruce and Marcia Jeffers, Ian and Corrinne Zeer, and Jesse, Sarah, and Harji Hari and Haralta Ranches with respect to *Environmental Protection and Enhancement Act* Approval No. 241939-00-00 issued to EcoAg Initiatives Inc. by the Director, Southern Region, Environmental Management, Alberta Environment.

Cite as: *Viponds et al. v. Director, Southern Region, Environmental Management, Alberta Environment, re: EcoAg Initiatives Inc.* (11 March 2011), Appeal Nos. 09-006-009, 016 & 019-R (A.E.A.B.).

**HEARING BEFORE:**

Mr. Alex G. MacWilliam, Panel Chair;  
Mr. Jim Barlishen, Board Member; and  
Ms. A.J. Fox, Board Member.

**BOARD STAFF:**

Ms. Denise Black, Board Secretary; and Ms.  
Marian Fluker, Associate Counsel.

**SUBMISSIONS BY:**

**Appellants:**

Mr. Kent and Ms. Ingrid Vipond; Mr. Bernie  
and Ms. Margie Brown; Mr. Robert and Ms.  
Lisa Cowling and Mr. Bruce and Ms. Marcia  
Jeffers, represented by Ms. Teresa Meadows,  
Miller Thomson LLP; Mr. Ian and Ms.  
Corrinne Zeer; and Mr. Jesse, Ms. Sarah, and  
Mr. Harji Hari and Haralta Ranches.

**Director:**

Mr. Brock Rush, Director, Southern Region,  
Environmental Management, Alberta  
Environment, represented by Ms. Charlene  
Graham and Mr. Andrew Bachelder, Alberta  
Justice.

**Approval Holder:**

EcoAg Initiatives Inc., represented by Mr.  
Kelly Nicholson and Mr. Jase Cowan, Field  
LLP.

**Intervenors:**

Mr. Ian and Ms. Laurie Currie.

**WITNESSES:**

**Appellants:**

Ms. Marcia Jeffers; Ms. Lisa Cowling, on  
behalf of herself and Mr. Bernie and Ms.  
Margie Brown; Mr. Roger Clissold,  
Hydrogeologist, hydrogeological consultants  
ltd.; Dr. J. Patrick A. Hettiaratchi, Professor of  
Environmental Engineering, University of  
Calgary; Mr. Ian and Ms. Corrinne Zeer; Mr.  
Kent and Ms. Ingrid Vipond; and Mr. Jesse,  
Ms. Sarah, and Mr. Harji Hari.

**Director:**

Mr. Brock Rush, Director, Southern Region,  
Environmental Management, Alberta  
Environment; Mr. Matt Haghghi, Industrial  
Approvals Engineer, Industrial Authorization  
Team, Southern Region, Alberta Environment;  
Ms. Susan McIntosh, Team Leader, Industrial

Authorization Team, Southern Region, Alberta Environment; and Ms. Janet Brown, Regional Contaminated Sites Hydrogeologist, Industrial Authorization Team, Southern Region, Alberta Environment.

**Approval Holder:** Mr. Peter Morrison, EcoAg Initiatives Inc; and Mr. Dennis Hodgkinson, DGH Consultants.

**Other:** Denice Stewart, Bylaw Officer, Municipal District of Foothills No. 31.

## EXECUTIVE SUMMARY

Alberta Environment issued an Approval under the *Environmental Protection and Enhancement Act* to EcoAg Initiatives Inc., authorizing the construction, operation, and reclamation of the High River Waste Management Facility (the Facility), located near High River, Alberta, for the collection and processing of waste to produce fuel (commonly referred to as biogas). The Facility will treat feedstock anaerobically through biodigestion, and the biogas generated is collected and used as fuel while the remaining material (sludge) is further treated to produce a nutrient soil amendment.

The Board received seven Notices of Appeal and concluded it would proceed with the appeals of Mr. Kent and Ms. Ingrid Vipond, Mr. Bernie and Ms. Margie Brown, Mr. Robert and Ms. Lisa Cowling, Mr. Bruce and Ms. Marcia Jeffers, Mr. Ian and Ms. Corrinne Zeer, and Mr. Jesse, Ms. Sarah, and Mr. Harji Hari and Haralta Ranches (collectively, the Appellants).

The Board held a hearing on February 9 to 11, 2011, in Okotoks to hear submissions on the following issue: Do the terms and conditions of the Approval adequately address the impacts of the facility on the environment?

The Board recommended the Approval be varied as suggested by Alberta Environment to clarify certain terms and conditions. EcoAg testified that these proposed changes were acceptable, and the Appellants did not raise any concerns regarding the suggested changes. In addition, the Board recommended further conditions be added to the Approval to ensure the environment is adequately protected and that neighbours in the area can have confidence the Facility will operate as intended. Specifically, the Board recommended the Approval be varied to include conditions that:

1. remove the ability of the Director to authorize changes to the process used in the Facility without requiring an amendment to the Approval, and require the Approval Holder to apply for an amendment to the Approval if it wants to change the process that it is using such that the public notice provisions of EPEA are triggered;

2. if an odour complaint is received that requires the Approval Holder to take the steps to stop offensive odours as required under the Approval, all such steps must be taken within two weeks of receiving the odour complaint, unless the Director grants an extension;
3. require the Approval Holder to contact the Director two weeks prior to starting operations at the Facility to allow the Director to conduct a compliance audit to ensure the Approval Holder has complied with the conditions in the Approval;
4. require the Approval Holder to submit and implement a Groundwater Monitoring Program acceptable to the Director prior to the Facility starting its operations;
5. require the Approval Holder to develop, submit, and implement an Emergency Response Plan acceptable to the Director prior to the Facility starting its operations; and
6. require all landowners and residents within a three-kilometre radius of the Facility be notified directly if any amendment applications or renewal applications are submitted to Alberta Environment.

The Board also suggested that, within 18 months of the Minister's decision, Alberta Environment cancel the Registration issued for the composting facility operated on the same quarter section of land as the biogas Facility. The proposed cancellation would ensure that: (1) current material located on the composting site would be consumed in the biogas Facility in a timely manner; and (2) EcoAg would be authorized to compost only manure and dry material in the composting site after the 18 month window, which it stated at the hearing was its intent.

## TABLE OF CONTENTS

I.	BACKGROUND .....	1
II.	SUBMISSIONS .....	3
A.	Jeffers and Cowlings .....	3
B.	Zeers.....	11
C.	Browns .....	12
D.	Haris.....	13
E.	Viponds .....	13
F.	Intervenors .....	15
G.	Approval Holder .....	16
H.	Director .....	27
III.	ANALYSIS.....	40
A.	Preliminary Matter .....	40
B.	Substantive Issues .....	41
IV.	RECOMMENDATIONS .....	49

## I. BACKGROUND

[2] On June 23, 2009, the Director, Southern Region, Environmental Management, Alberta Environment (the “Director”), issued Approval No. 241939-00-00 (the “Approval”) under the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12 (“EPEA” of the “Act”), to EcoAg Initiatives Inc. (“EcoAg” or the “Approval Holder”) authorizing the construction, operation, and reclamation of the High River Waste Management Facility (the “Facility”) located in the SE 16-19-1 W5M near High River, Alberta, for the collection and processing of waste to produce fuel. Such fuel is commonly referred to as biogas.

[3] Between July 22 and September 29, 2009, the Environmental Appeals Board (the “Board”) received Notices of Appeal from Mr. Kent and Ms. Ingrid Vipond (the “Viponds”) (09-006), Mr. Bernie and Ms. Margie Brown (the “Browns”) (09-007), Mr. Robert and Ms. Lisa Cowling (the “Cowlings”) (09-008), Mr. Bruce and Ms. Marcia Jeffers (the “Jeffers”) (09-009), Mr. Ian and Ms. Corrinne Zeer (the “Zeers”) (09-016), and Mr. Jesse, Ms. Sarah, and Mr. Harji Hari and Haralta Ranches (the “Haris”) (09-019) (collectively, the “Appellants”).<sup>1</sup> The Board notified the Approval Holder and the Director of the Notices of Appeal, and requested the Director provide the Board with a copy of all documents in his possession relating to the application and the issuance of the Approval (the “Record”).

[4] The Record was received on August 21, 2009. Updates to the Record were provided on March 31, 2010, October 8, 2010, October 29, 2010, and January 26, 2011, and the Director also provided a number of policy documents on December 17, 2010. Copies of these documents were provided to the Appellants, the Approval Holder, and the Director (collectively, the “Parties”).

[5] According to standard practice, the Board asked the Natural Resources Conservation Board (“NRCB”), the Energy Resources Conservation Board (“ERCB”), and the Alberta Utilities Commission whether this matter had been the subject of a hearing or review under their respective legislation. The boards and commission all responded in the negative.

---

<sup>1</sup> The appeal of Mr. Wendel and Ms. Christy Wickenheiser was dismissed for failing to comply with the Board’s request to submit a written submission in respect of the preliminary motions. See: *Vipond et al. v. Director, Southern Region, Environmental Management, Alberta Environment*, re: *EcoAg Initiatives Inc.* (06 January 2011), Appeal Nos. 09-006-009, 016, 017, & 019-ID1 (A.E.A.B.).

[6] A mediation meeting was held on October 30, 2009, in High River, Alberta. An additional mediation meeting was held on March 9, 2010, in Calgary. No resolution was reached, and the Board proceeded with the Hearing process.

[7] On September 23, 2010, the Board asked the Parties to provide submissions on the preliminary motions that had been raised.<sup>2</sup> Submissions were received from the Parties between October 12, 2010, and November 15, 2010. The Board notified the Parties of its decision regarding the preliminary matters on November 25, 2010, and provided its decisions with reasons on January 6, 2011.<sup>3</sup>

[8] On December 6, 2010, the Board received a request from the Jeffers and Cowlings and the Viponds to order the Approval Holder and Director to provide additional documents. The Board received responses from the Director and the Approval Holder on December 14 and 15, 2010, respectively. On January 4, 2011, the Board provided the Parties with its decision regarding the documents requested. The documents were provided on January 11, 2011.

[9] The Board published the Notice of Hearing in the High River Times, Okotoks Western Wheel, Vulcan Advocate, and Nanton News, and provided the notice to the Government of Alberta news release service, Municipal District of Foothills, and the Town of High River. In response to the Notice of Hearing, the Board received seven intervenor applications. Between December 28, 2010, and January 6, 2011, the Board received written comments regarding the intervenor applications from the Parties. The Board accepted the intervenor application of Mr. Ian and Ms. Laurie Currie (the “Intervenors”). The Board provided the Parties and the applicants notice of its decision on January 12, 2011, and its reasons on January 26, 2011.<sup>4</sup>

---

<sup>2</sup> The preliminary issues were:

1. Did the Appellants file statements of concern with Alberta Environment?
2. Was adequate notice of the application given?
3. What documents should be disclosed and provided to the Appellants?
4. What issues are within the Board’s jurisdiction and should be considered at the hearing, if one is held?

<sup>3</sup> See: *Vipond et al. v. Director, Southern Region, Environmental Management, Alberta Environment, re: EcoAg Initiatives Inc.* (06 January 2011), Appeal Nos. 09-006-009, 016, 017, & 019-ID1 (A.E.A.B.).

<sup>4</sup> See: Intervenor Decision: *Vipond et al. v. Director, Southern Region, Environmental Management, Alberta Environment, re: EcoAg Initiatives Inc.* (25 January 2011), Appeal Nos. 09-006-009, 016, & 019-ID3

[10] On January 14, 2011, the Board received an interim costs application from the Cowlings and Jeffers. The Board received comments on the application from the other Parties between January 17 and 24, 2011. The Board provided its decision on the interim costs application on January 27, 2011.

[11] On January 26, 2011, the Director notified the Board of his concern that the Appellants were raising the issue of cumulative effects in their submissions, which he said was contrary to the Board's prior decision setting the issues for the Hearing. The Board provided clarification to the Parties on January 31, 2011.<sup>5</sup>

[12] On February 2, 2011, the Approval Holder wrote the Board expressing concern that the Appellants intended to include material in their submissions that was not properly before the Board. The Board responded on February 3, 2011, advising the Approval Holder that it was appropriate for the Approval Holder to raise its concerns at the start of the Hearing.

[13] The Board held the Hearing on February 9 to 11, 2011, in Okotoks, Alberta.

## **II. SUBMISSIONS**

### **A. Jeffers and Cowlings**

[14] The Jeffers and Cowlings live within one mile of the Facility.

[15] They noted that in the application for the Facility, the purpose was identified as to "...expand existing composting business to include SRM [Specified Risk Material] Disposal through Bio-digestion creating methane gas for energy use and the through-put from the Alkaline Hydrolysis unit creates compost to be marketed as a soil amendment."<sup>6</sup>

[16] The Jeffers and Cowlings stated the Facility is located on the same lands as an active outdoor composting facility that is authorized to accept up to 20,000 tonnes of waste per year.

---

(A.E.A.B.).

<sup>5</sup> In its January 31, 2011 letter, the Board stated:

"The only matter that is before the Board in these appeals is the facility that has been authorized by Approval No. 241939-00-00. The difference in the environment before the facility has been built and after the facility has been built and becomes operational is matter that is properly before the Board. Cumulative effects in any other context are not a matter that is properly before the Board."

<sup>6</sup> Jeffers' and Cowlings' submission, dated January 25, 2011, at paragraph 1.

[17] The Jeffers and Cowlings noted that, while the application was being prepared, the Director indicated to the Approval Holder that updated Phase I and Phase II environmental site assessments should be prepared in support of the application. The Jeffers and Cowlings stated the Approval Holder did not supply, and the Director did not require, any baseline data establishing the environmental quality at the site of the proposed Facility before issuing the Approval. They argued that when the Approval was issued, the terms and conditions were based on the assumption the Facility site was a site that had not been negatively impacted, but subsequent testing of groundwater at the site and follow up on complaints with regard to the site indicate the site and surrounding area have experienced groundwater, odour, air, aesthetic, nuisance insects, plant, and animal impacts.

[18] The Jeffers and Cowlings noted the purposes of EPEA (as stated in section 2) emphasize the importance of preventing and mitigating the environmental impacts of development. The Jeffers and Cowlings submitted that, now that the Director is aware the environmental conditions at the site differ significantly from the original assumptions that formed the basis for the Approval, the Approval must be revisited to reflect the updated knowledge of the conditions at the site and surrounding area and determine if the terms and conditions are sufficiently protective and preventative of additional environmental impacts. The Jeffers and Cowlings submitted the Director's mandate under section 2 of EPEA requires him to reconsider whether any mitigative measures he included in the Approval properly reflect the reduced adaptive capacity of the site and surrounding lands due to current and historical impacts.

[19] The Jeffers and Cowlings argued the monitoring programs and emission limits need to be more prescriptive and stringent because the capacity of the receiving environments to absorb additional impacts is limited. They argued the monitoring data that indicate environmental impacts are occurring at the Facility that require specific actions to be taken also warrant a more prescriptive and aggressive approach. They pointed to the conditions in the Approval that address odour emission complaints, management and responses to odour complaints, and triggers for an odour reduction plan. In their opinion, these conditions may be adequate in an airshed that is not significantly impacted by odour emissions, but were not sufficiently protective in this case. The Jeffers and Cowlings were concerned the Facility will be an additional odour source and the provision requiring the development of an Odour

Reduction Plan could prolong the unbearable effects while the Approval Holder takes a “trial and error” approach to solving the problem. They argued the Odour Reduction Plan as described in the Approval does not sufficiently prevent or mitigate impacts quickly enough given the existing scale and scope of impacts in the area.

[20] The Jeffers and Cowlings reported that there were significant changes to the Facility from what was proposed in the application and approved and how the Facility was ultimately constructed and how it is proposed to be operated. The Jeffers and Cowlings noted the Approval contains no less than 16 references to items “as described in the application.” Where significant deviations from the processes proposed in the application have occurred, the suitability of each of these terms and conditions needs to be revisited to reflect these differences.

[21] The Jeffers and Cowlings identified the following differences that could affect the potential environmental impacts associated with the Facility:

1. The Approval is premised on the digestion technology that would use high temperature mesophilic/thermophilic digestion tanks, but the Approval Holder now appears to be proposing a low temperature psychrophilic digestive system. These technologies differ in terms of process, effectiveness, and waste by-products, but the Approval has not been revised to reflect these apparent changes.
2. The Approval requires the construction of an Industrial Runoff and Stormwater Retention Pond System that meets certain requirements, including the capability of handling a 1-in-100 year, 24-hour storm event, but the system does not appear to be constructed and working as set out in the Approval and appears to be hydraulically linked to the other surface water ponds at the site associated with the feedlot and adjacent compost facility.
3. The most recent drawing of the Facility provided by the Approval Holder does not contain many of the elements specified as being required under condition 3.1.4 of the Approval.
4. There are differences in the input feedstock and the output. The application described the inputs as manure, paunch, meat and bone meal, specified risk material (“SRM”), and phosphogypsum, but the most recent mass balance includes SRM, municipal waste sludge, paunch, meat plant biosolids, urban organics, glycerine, drywall, wood waste, feedlot manure, and manure from Cargill. These differences have the potential to impact the effectiveness and efficiency of the biodigestion process and the environmental impacts that result from these processes.

5. The most recent site diagram does not provide information regarding the air pollution control systems that will be established onsite and it is unclear where the emergency flare and biofilter system will be located and how they will operate.

[22] The Jeffers and Cowlings argued major amendments to the Approval are required to properly regulate the Facility as it is now constructed and is proposed to operate in order to reflect changes in feedstock, inputs, pollution control for air and odour emissions, and surface water management.

[23] The Jeffers and Cowlings noted the application did not contain information on the likely noise effects and, furthermore, the Approval does not contain noise limits or requirements to respond to noise complaints. They stated the potential noise effects of the Facility include noises associated with increased truck traffic hauling additional feedstock to the Facility and potential noise effects associated with flaring. The Jeffers and Cowlings submitted the Approval should include a mechanism to address noise complaints and, if there are repeated noise complaints, there should be a means of ensuring the Approval Holder is required to initiate a reasonable noise assessment and mitigation plan.

[24] The Jeffers and Cowlings said there are several flaws with the odour planning regime that limits its effectiveness:

1. There is no requirement that the odour complaint system be monitored and maintained by a third party. The Facility is located on a site with an existing outdoor compost facility that has been the source of odour complaints; determining the source of a specific odour complaint may require the expertise of an objective third party. Given the implications associated with the Facility being found to be the source of the odour as compared to the consequences of finding the compost facility to be the source of the odours, there would be a disincentive for the Approval Holder to trace any odour source to the Facility. Requiring a neutral third party to administer the odour complaints program would increase confidence in the community that complaints arising from the Facility are properly identified.
2. Under condition 4.1.27 of the Approval, if the Approval Holder is required to prepare an odour management plan, the Approval Holder will be able to try the actions listed in condition 4.1.26 for an indeterminate time period, and only after all eight of the possible measures in condition 4.1.26 have been tried and the odour persists would the Approval Holder be required to change from a biofilter to a thermal destruction technology. There is no deadline for implementing

the improved technology to address odour problems. Given the odour impacts surrounding the Facility, a more responsive and prescriptive approach is warranted, and the Approval should contain clearly defined deadlines for response and implementation of improved odour control systems.

[25] The Jeffers and Cowlings stated there have been concerns about animal and insect pests being attracted to the existing compost site and area surrounding the Facility, and concerns about litter and feedstock from untarped loads being released on the roads and areas adjacent to the compost site. The Jeffers and Cowlings argued that, given the waste materials the Approval Holder has proposed to bring on-site, it is not unreasonable to anticipate that waste may be released at points where waste materials are transferred or where biodigester sludge is off loaded, and that these spilled materials can attract pests. They submitted the Approval should contain conditions requiring a litter and pest control monitoring or management program.

[26] The Jeffers and Cowlings submitted their central aesthetics issue relates to visual impacts associated with the escape of waste materials at waste transfer points near the Facility building and the impacts of waste materials and undigested or partially digested feedstock being staged or stockpiled around the Facility. The Jeffers and Cowlings submitted that, due to the potential odour, soil, surface water, groundwater and aesthetics concerns, the Approval should be amended to include conditions that prohibit the placement of waste byproducts or undigested or partially digested feedstock from the Facility outside the process building.

[27] The Jeffers and Cowlings noted a groundwater supply evaluation report prepared for the Approval Holder's predecessor company in 1997, indicated the Jeffers' and Cowlings' groundwater wells could be hydraulically linked to and affected by groundwater wells at the location of the Facility, but this information was not provided to the Director with the application. The Jeffers and Cowlings said this potential linkage increases their concerns regarding the potential for the Facility to impact directly their groundwater.

[28] The Jeffers and Cowlings stated the groundwater sampling data from the site that were provided to the Director after the Approval was issued identified the Facility was approved in a location where the groundwater has been impacted by *E. coli*, chloride, and nitrate contamination. The Jeffers and Cowlings argued the Approval should be suspended

until the full extent of the existing groundwater contamination has been determined, a mitigation plan has been implemented, and the Facility drawings and operations have been assessed to ensure all necessary measures have been taken to mitigate groundwater contamination. In addition, the Jeffers and Cowlings submitted the conditions of the Approval with respect to the groundwater monitoring program should be amended to clarify that the program must be approved and implemented before the Facility becomes operational.

[29] The Jeffers and Cowlings expressed reservations regarding the appropriateness of the use of a clay liner system for the Industrial Runoff and Stormwater Retention Pond System as authorized in the Approval. They indicated that since there are already impacts on groundwater, a high degree of protection is warranted with respect to surface and ground water. They recommended an amendment to the Approval requiring the clay liner system be replaced with a geomembrane.

[30] The Jeffers and Cowlings expressed concern regarding the operation of the biofilter air pollution control system currently outlined in the Approval. They stated that overloading the system may result in odorous air emissions consisting of volatile organic carbons, ammonia, and reduced sulphur compounds. The Jeffers and Cowlings were also concerned about the impact of the emergency flare to burn off methane-rich biogas. The Jeffers and Cowlings recommended amendments to the Approval to reflect greater protection including:

1. installing a standby flare or incinerator instead of installing two parallel biofilter units;
2. burning off methane rich gases in an incinerator operating at temperatures high enough to destroy toxic by-products;
3. using a geomembrane liner in the pond;
4. reconsidering whether land application of industrial and stormwater runoff should be allowed; and
5. not allowing a psychrophilic anaerobic digestion system because it is less efficient than higher temperature systems.

[31] The Jeffers and Cowlings noted the Facility will produce biogas, a methane rich fuel source, and the accumulation of methane creates a potential explosion hazard. They submitted the Approval should include a requirement that an emergency response plan be developed, including a neighbour notification system, emergency responder process, and

potential evacuation or shelter-in-place processes to be implemented in the event of an emergency such as an on-site spill, release during transportation, releases of air emissions, fire, and explosion hazards.

[32] The Jeffers and Cowlings noted there was no information provided regarding site decommissioning and reclamation, but the Director determined the appropriate amount of security to be posted by the Approval Holder for the Facility was \$10,000.00. The Jeffers and Cowlings stated that, according to Alberta Environment, the amount of security must cover the cost of reclamation in case the operator is unable to complete reclamation on the site. The Jeffers and Cowlings expressed concern that the amount of security required by the Director is inadequate to cover the costs of even the preliminary steps in reclamation, much less cover the costs of reclamation in the event the Approval Holder is unable to carry out the reclamation of the site. The Jeffers and Cowlings asked the Board to recommend the Director reconsider the amount of security required to ensure proper and complete reclamation in light of the new information regarding existing site conditions and the operation of the Facility as constructed and proposed to be operated.

[33] The Jeffers and Cowlings said the soil characteristics at the site are not well known and the extent to which the soils are permeable and bedrock fractures exist is not clear. They said soil impacts caused by feedstock spills, outdoor storage of undigested or partially digested feedstock, and waste byproducts have the potential to cause additional groundwater impacts. The Jeffers and Cowlings submitted the soil monitoring program in the Approval is not sufficiently preventative and the response requirements are not sufficiently prescriptive to ensure soil impacts do not occur or are promptly remediated if impacts do occur. They submitted the soil monitoring program must be amended to require more extensive baseline data regarding the existing soil conditions at the site and to ensure the Approval Holder responds quickly and proactively to monitoring results that indicate impacts are occurring.

[34] The Jeffers and Cowlings said there is no indication the Director took the cumulative effects of the surrounding operations into account when considering the potential environmental impacts associated with the Facility. They stated the Director had no data on which to assess the baseline environmental conditions. The Jeffers and Cowlings stated the Facility is not a minuscule development with low potential for impacts, and it is not located on

a greenfield site with no existing impacts. Therefore, according to the Jeffers and Cowlings, cumulative effects should have been considered in the decision to issue the Approval and in the terms and conditions of the Approval. The Jeffers and Cowlings argued that by failing to consider background conditions and existing impacts to which the Facility will have added effects, the differences in scale, nature, and extent of the effects have not been adequately incorporated into the terms and conditions of the Approval. The Jeffers and Cowlings argued the Approval needs to be amended to prescribe a more preventative and proactive impact monitoring response approach, and failure to do so will cause the surrounding area and residents to suffer greater harm.

[35] The Jeffers and Cowlings submitted that the Approval needs to be revisited because its terms and conditions are insufficient to prevent further environmental harm and to mitigate the effect of impacts further exacerbated by the Facility. They also submitted that, with the differences between the Facility as proposed and approved and the Facility as constructed and proposed to be operated, additional uncertainty regarding the nature, scale, and scope of impacts may render the terms and conditions in the Approval to be insufficient.

[36] The Jeffers and Cowlings asked the Board to recommend the Approval be suspended until:

1. the full extent of the existing environmental impacts has been properly delineated and the additional impacts of the Facility have been factored in; and
2. the Approval Holder submits the information necessary to assess the likely environmental impacts of the Facility as constructed and as proposed to be operated and the necessary measures to mitigate possible impacts, including as-built drawings of the Facility and Industrial Runoff and Stormwater Retention Pond System, site specific information regarding the technology to be used, feedstock to be processed, byproducts to be produced, and any other information necessary to develop terms and conditions that are protective of the environment and reflective of this specific Facility constructed at this site.

**B. Zeers**

[37] The Zeers said the Facility is located in an area with significant surface water, groundwater, air, aesthetic, soil, weed, and nuisance animal impacts from adjacent facilities. They submitted that, given the existing environmental impacts, the terms and conditions in the Approval need to be more protective and preventative than what would be required if the Facility was located at a site with no existing composting and feedlot facilities.

[38] The Zeers argued the Odour Response Plan is ineffective due to existing feedlot and compost odours, and the Facility will produce even more odours. They stated that when they make odour complaints, they are asked where and what the smell is. The Zeers feel this handling of their complaints is meaningless, as they have not been trained to determine what the smell is or the location of the origin of the smell. The Zeers argued they should be able to call a 1-800 number run by a third party, not the Approval Holder. They said the third party should keep records of all calls made, keep caller identification confidential, and report the calls to the appropriate person.

[39] The Zeers expressed concern regarding the impacts on surface water and Tongue Creek resulting from runoff from the feedlot, compost facility, and the Facility.

[40] They noted the Approval does not contain conditions regarding cross-contamination between the Facility vehicles and equipment and those used at the feedlot or composting facility, thereby raising the possibility of SRM getting into the feedlot. The Zeers stated the vehicles will be using the same roads at the site plus public roads. They suggested the Approval Holder be required to sterilize the vehicles or equipment being used or designate the vehicles and equipment for just one operation.

[41] The Zeers argued there are no conditions in the Approval to address the abundance of nuisance animals attracted to the site.

[42] They noted there are no conditions regarding the stockpiling of the end product if it cannot be sold as fast as it is processed. They suggested limits be set as to how much feedstock can be on hand waiting to go into the Facility, what material is stored in the building, and the amount of finished product. The Zeers did not believe the Approval Holder should be allowed to stockpile the end product on lands leased or owned by the Approval Holder.

[43] The Zeers argued that an Emergency Response Plan needs to be in place to address fires, explosions, and spills at the Facility. They suggested a call list of people within a five mile radius needs to be included in the plan, and the Approval Holder should host a meeting to explain the Emergency Response Plan and how it will work.

[44] The Zeers noted the aesthetics at the site are horrible, weeds are being blown onto neighbouring fields, costing those landowners money to control the weeds, and garbage is blown onto other properties.

[45] The Zeers stated the Approval does not address the complexities of the three facilities. They argued there are too many regulatory agencies with different mandates; there needs to be one regulatory agency overseeing the entire operation.

[46] The Zeers argued the Approval needs terms and conditions to protect wildlife, human health, and the environment.

### **C. Browns**

[47] The Browns said they own the half section of land on the north side of the Approval Holder, and their family, water supply, and Tongue Creek are located in the valley directly below and within half a mile from the Facility. The Browns listed their concerns as:

1. water and soil contamination due to runoff and possible recurrent flooding. Runoff into Tongue Creek is inevitable because of the topography of the land.
2. responsibility for reclamation once contamination occurs;
3. potential health effects due to odours;
4. damage to surrounding vegetation from a combination of unknown airborne pollutants and crows attracted to decomposing matter;
5. coyotes attracted to rotting matter;
6. aesthetics and resulting loss in property value;
7. unmonitored waste being accepted and stored onsite with no knowledge of what occurs when there is an abundance and the supply continues to arrive;
8. determining what types of material will be accepted and ensuring it will be harmless to neighbouring people and properties; and

9. regulating and monitoring the volume of material accepted and reporting on the substances accepted.

[48] The Browns submitted the operation should not be allowed to continue because their concerns have not been addressed satisfactorily.

#### **D. Haris**

[49] The Haris stated their main concern is odour and how it affects their quality of life on a daily basis. They questioned who would be liable if the site is abandoned and who would be responsible for the clean up. The Haris expressed concern regarding safety issues of the Facility, including explosions and toxic fumes from the methane gas produced. Other concerns expressed by the Haris were runoff containment from the barn, garbage blowing onto their property, and increased traffic with questionable loads of material entering and exiting the Facility.

#### **E. Viponds**

[50] The Viponds said there have been two releases to Tongue Creek from the Approval Holder's facilities during the past 15 years. They said this indicates the area has a history of flooding, and there is a threat that outflow could affect water quality.

[51] The Viponds said the Approval Holder's activities have already affected groundwater in the area and made the Viponds' water non-potable.

[52] The Viponds referred to Alberta Environment's *Standards and Guidelines for Municipal Wastewater Irrigation* document and noted:

1. the property line where the lagoons are located does not meet the 30 metre setback;
2. the designated right of way of a rural road does not meet the 30 metre setback;
3. the designated right of way of a secondary highway does not meet the 100 metre setback;
4. the proximity of an occupied residence does not meet the 300 metre setback;

5. the lagoons are located on lands with side slopes greater than 3:1; and
6. the requirements of cell isolation, setback distances, site constraints, fencing, and signage have not been met.

[53] The Viponds argued the location is inappropriate for the Facility because it is an aquifer recharge zone.

[54] The Viponds also referred to the *Guide to Content of Industrial Approval Applications* and noted the Facility should meet the following requirements:

1. topography;
2. soil;
3. cover; and
4. identification of the location of all water bodies and water supply wells within a 500 metre radius of the site.

[55] The Viponds argued the Facility's industrial runoff drainage system does not meet the peak runoff capacity for a one-in-ten year storm event at the point of discharge to a treatment facility. They noted an Emergency Response Plan has not been filed with the local municipality or Alberta Public Safety Services. The Viponds recommended the Facility follow the same notification process as required by the ERCB's 056 Directive.<sup>7</sup> The Viponds argued an Environmental Impact Assessment should have been required.

[56] The Viponds argued the Approval Holder is not complying with the biosolids spreading programs stated in the *Equipment Calibration for Application of Biosolids*, specifically:

1. biosolids should not be spread close to aquifers;
2. biosolids should not be spread within 300 metres of any occupied building on the property; and
3. biosolids should not be spread within 30 metres of a property line.

---

<sup>7</sup> *Directive 056: Energy Development Application and Schedules* (Directive 056) provides the requirements and procedures for filing a licence application to construct or operate any petroleum industry energy development. Part of Directive 056 specifies the personal consultation and notification that is required and expected as part of the application process. According to Directive 056, the applicant must notify all parties with an interest in land within a specified radius to be notified included in the participant involvement program.

The Viponds said the land where the sludge is being spread is too steep and too close to Tongue Creek.

[57] The Viponds reported they made 85 calls to Alberta Environment between September 4, 2008 and November 16, 2010, complaining about odours from the Approval Holder's operations.

[58] The Viponds noted there are no conditions in the Approval regarding noise associated with trucks loading and unloading, emergency flaring and venting, and increased traffic to and from the Facility.

[59] The Viponds said the ravens, crows, and coyotes feed on the refuse to be used as feedstock at the Facility. The Viponds stated the feedstock stored outside is unnatural and upsetting the entire ecosystem.

[60] The Viponds argued the Facility should not be located within 400 metres of Tongue Creek.

[61] The Viponds argued:

1. a full environmental impact assessment must be completed before the Facility starts;
2. a full hydrogeological study be completed before the Facility moves forward; and
3. Alberta Environment must amend its notification process to ensure all landowners within a 3 kilometre radius are notified in writing when an application is received.

## **F. Intervenors**

[62] The Intervenors stated they own land east of the Facility and along Tongue Creek. The Intervenors believed the major issue is the release of odours from the Approval Holder's facilities.

[63] The Intervenors noted the Approval Holder's position is that the odour is coming from the composting operation. The Intervenors questioned how the open air composting operation meets the design requirements of EPEA for control of emissions of offensive odours. The Intervenors noted the Facility has not been built in a timely manner and the Approval does not stipulate a completion date. The Intervenors argued this loophole allows

the Approval Holder to secure waste streams under the pretense it is handling wastes in an environmentally suitable manner but, in reality, the waste streams are handled in the opposite manner.

[64] The Intervenors understood Alberta Environment has introduced more stringent and applicable standards for operating composting operations, but many existing composting operations, including the composting facility on the Approval Holder's property, were grandfathered at the discretion of the Director and are not required to meet the new standards. The Intervenors questioned whether the Director is not forcing the composting facility to be brought up to the new standards because of the construction of the Facility. The Intervenors believed that if the composting operations were brought up to standard, most of the current issues would be eliminated.

[65] The Intervenors argued that, if the Approval required the Facility to be in operation by June 2011, or if the composting facility was required to conform to current standards, the issues would be resolved. The Intervenors stated the Approval Holder should support this form of amendment, as it would simply be following through on what it publicly committed to do.

### **G. Approval Holder**

[66] The Approval Holder explained the Facility uses established technology that allows the energy in organic matter to be reclaimed and put to use increasing efficiency, reducing waste and producing an odourless nutrient soil amendment. The Approval Holder said the Facility does not use significant external power or water inputs and will have minimal or no impact on the local environment. It said many of its neighbours are happy the existing compost material will be moved indoors, and it has drawn positive attention from industry and government for its promise to reduce waste while increasing energy efficiency. The Approval Holder stated it went through a thorough and objective approval process, and the Director granted the Approval, establishing clear terms and conditions that ensure the protection of the environment. The Approval Holder concluded the Facility meets all standards within the Director's jurisdiction.

[67] The Approval Holder acknowledged the Facility must be constructed, operated, and eventually reclaimed in a manner that protects the environment.

[68] The Approval Holder explained the Facility was designed to process a mixture of low nutrient feedlot waste and higher nutrient waste brought in to enhance the nutrient level of the produced soil amendment. The energy removed from the feedstock is used to power the process of breaking down the feedstock further. The Approval Holder said the Facility was designed using best practices in the fields of alkaline hydrolysis, thermo hydrolysis, anaerobic digesters, and biofilter media. It stated there are two process streams, with the process for SRM feedstock originating through one entry point and the process for regular feedstock originating at another entry point.

[69] The Approval Holder explained the process is as follows:

1. SRM is received in trucks that enter the Facility, which is under negative pressure to prevent odours or debris from leaving the building. The doors are closed before the trucks are unloaded, and the trucks, including the tires and undercarriage, are cleaned prior to leaving the Facility to prevent the possibility of any feedstock being tracked out of the Facility.
2. The feedstock is ground or added whole to the alkaline hydrolysis unit. The temperature, time, and pressure of the hydrolysis unit are monitored to ensure they remain within the standards set by the Canadian Food Inspection Agency (“CFIA”). Completed product is transferred to a holding tank.
3. A thermal oil heater heats the oil-jacketed alkaline hydrolysis unit and the thermo hydrolysis unit. Radiant heat from the oil is used to dry the finished nutrients coming from the stabilizer drum. The thermal oil heater meets all Canadian Standards Association standards for emissions.
4. All non-SRM feedstock enters at this part of the process. This organic feedstock is delivered through a separate entrance to the Facility, with the building under negative pressure to prevent odours and debris from escaping. The doors are shut prior to the organic feedstock being unloaded. Foreign material is removed, and the clean product is pumped to a storage tank.
5. The product is pumped through oil-jacketed tanks where the product is pressurized and heated to ensure any pathogens are killed and to facilitate the breakdown of nutrients to increase their availability for digestion.
6. The organic feedstock and deactivated SRM feedstock are combined in a scale tank. The mixed product is hydrolyzed while pumped to the anaerobic digester unit. The anaerobic digester contains microbes that

process organic material into methane gas. The gas is collected and used to produce energy through a boiler or engine to create power for the operations of the feedlot.

7. The digested effluent is pumped to the stabilizer drum, where it is mixed with manure and bedding to a moisture level of 65 percent. Manure and bedding is recovered from the adjacent feedlot and unloaded inside the Facility. The product passes through the stabilizer drum where it reaches temperatures of 55 degrees Celsius. Once the product has fully moved through the stabilizer drum, it is discharged.
8. The resulting product is processed through a priller to make a granular soil amendment product. Product from the priller or product from the stabilizer drum passes through the drier and is ready to be used as a soil amendment.
9. The air is processed through a biofiltration system before it is expelled from the Facility. The air is forced through a water mist and into the specifically designed biomedica that contains a mixture of microbes and carbon to remove all volatile organics, reduced sulphur compounds, and nitrogenous compounds.
10. The processed, benign, odour free air travels through the biofilter, passing through the biomedica, and is dispersed through an exhaust stack. The emissions are monitored at the biomedica and the exhaust stack.

[70] The Approval Holder argued the Approval should not be varied or reversed unless the Appellants can satisfy the Board, on a balance of probabilities, there is sufficient evidence to justify such an action. The Approval Holder argued the role of the Board is not to conduct a full-scale environmental assessment but to look at the terms and conditions of the Approval. Furthermore, the Approval Holder asserted the Board could not take into consideration any submissions made by the Appellants that related to the composting sites as the composting sites and their operations were outside the jurisdiction of the Board.

[71] The Approval Holder stated the Director drafted the Approval to address the issues after numerous site visits, deliberation, and consultation. The Approval Holder noted that, except for the Browns, none of the Appellants visited the site so their understanding of the process may be limited.

[72] The Approval Holder submitted the conditions in the Approval sufficiently address the Appellants' concerns.

[73] The Approval Holder cautioned the Board in exercising its jurisdiction over noise. The Approval Holder admitted there may be a small increase in traffic movement on the road to the Facility, but the issue of noise related to traffic is a municipal planning issue and not within the Board's jurisdiction.

[74] The Approval Holder stated the Facility:

1. is in a self-contained building;
2. will contain any sound generated from the fans and motors used for air movement and keeping feedstock moving through the process;
3. will not contain live animals; and
4. will not contain heavy machinery that creates industrial noise.

[75] The Approval Holder did not believe the Appellants would be able to hear the sound generated from the Facility. The Approval Holder argued there is no evidence that any significant sound will occur as a result of the construction, operation, and reclamation of the Facility, and there is no reason to believe the sound created will travel outside the walls of the Facility.

[76] The Approval Holder acknowledged the Appellants' concerns regarding odours in the region and added there are other facilities in the area, including large feedlots, which may cause odours.

[77] The Approval Holder explained odours should not be a concern with the Facility because:

1. the feedstock arriving at the Facility is transported by truck;
2. the Approval does not permit any feedstock to be stored outside the building except in closed tanker vessels;
3. the negative pressure environment ensures odours do not escape when the door is opened to receive feedstock;
4. any air exiting the building goes through a central fugitive emission control system, which collects air from the storage tanks and releases the air through the biofiltration system where it is treated. The biofilter media consists of tree bark, compost, and other types of vegetative material, in which biological organisms destroy any volatile compounds, reduced sulphur compounds, and nitrogenous compounds; and

5. there are two chambers with biofilters to ensure continuity of air treatment even when maintenance occurs on one biofilter.

[78] The Approval Holder noted the Approval includes additional conditions to ensure odours are not emitted:

1. sampling ports in two locations (the biofilter inlet and exit stack ports), an exhaust stack, and the construction of an insulated biofilter housing to ensure optimum conditions are maintained;
2. humidity and temperature control to ensure the biofilters work at peak efficiency;
3. sufficient negative pressure is created during operations to prevent any odours from escaping;
4. no opening of doors unless the air handling system is capable of maintaining the negative pressure;
5. an Operating and Maintenance Manual for the biofiltration system which includes operating procedures, a weekly inspection program, documentation and retention of inspection results, and a training program for the operation, monitoring, and maintenance of the biofiltration system;
6. a schedule for sampling volatile organic compounds, total reduced sulphur compounds, and ammonia;
7. regular reporting of sampling, complaints of odours, and steps taken to address odour concerns;
8. an Odour Complaint Management and Response Plan, including a procedure for handling complaints made after hours, records of wind characteristics at the time of the odour complaint, and a procedure for ensuring the complaint is addressed immediately and followed up; and
9. an Odour Reduction Plan to follow up legitimate odour complaints. If after one month the complaint is not resolved, the Approval Holder is required to apply for an amendment to the Approval to allow for upgraded odour control equipment to be installed.

[79] The Approval Holder submitted the terms and conditions of the Approval are clear, thorough, and stringent. The Approval Holder could not imagine how the Director could have been more thorough and specific in anticipating the Appellants' concerns regarding odour. The Approval Holder submitted there is no need to add anything further to the Approval in this respect.

[80] The Approval Holder argued there are no legitimate aesthetic concerns to be addressed with regard to the Approval. The Approval Holder explained the Facility will be situated in a building that has been in place on the lands since 1990, so no new buildings will be constructed and the building will be virtually unchanged on the outside. The Approval Holder stated the building is behind a silo, farm shop, and a silage pit berm, and is set back from the road and neighbouring properties. The Approval Holder submitted there would be little or no aesthetic impact from the Facility.

[81] The Approval Holder said dust is unable to leave the Facility due to the negative air pressure and the requirement that the doors be closed at all times except for receiving and sending trucks. The Approval Holder noted that any increase in traffic is expected to be minimal, and dust created by the road is within municipal jurisdiction.

[82] The Approval Holder questioned how the Facility would result in any impacts to groundwater since:

1. the Facility is self-contained;
2. no emissions of any kind are placed in the ground;
3. there is no process by which emissions would enter the groundwater or impact the groundwater;
4. only substances authorized by the Approval can be released to the surrounding watershed;
5. a concrete secondary containment system is required, consisting of a sloped concrete floor with berms and a sump surrounding all tanks, reactors, drums, and vessels in the Facility process building;
6. the Facility must contain a designated area for processing SRM with concrete curbing around the entire Facility building;
7. stormwater, which is defined as precipitation that falls on or traverses the Facility's undeveloped area, never comes in contact with any feedstock. Nevertheless, this water must be captured and released to an Industrial Runoff and Stormwater Retention Pond;
8. the retention pond must contain a one metre thick, compacted clay liner, a control system for any areas where a spill could occur, a system of dykes and containments to ensure the surrounding watershed and groundwater are protected from contamination, and a system to pump the water into the Facility process building to be used as process water;

9. the pond must be constructed to accommodate a one in a hundred year storm event and must be located more than 100 metres from Tongue Creek;
10. drawings of the Industrial Runoff and Stormwater Retention Pond must be submitted along with quality assurance and quality control documentation regarding its construction;
11. industrial runoff, which consists of precipitation that falls within the secondary containment area for the tanks and liquid wastes from spillage and maintenance activities that collects in a sump within the secondary containment area, is used as process water and is contained within the Facility or pumped back into the Facility to be used in the processes;
12. if the contents of the Industrial Runoff and Stormwater Retention Pond cannot be used in the Facility, then the contents of the pond can only be released to a wastewater treatment facility with the appropriate approval, by land application provided conditions specified in Alberta Environment's Guideline for Municipal Wastewater Irrigation, April 2000, are satisfied, or as authorized by the Director;
13. water used in the Facility cannot be released to the groundwater without authorization by the Director;
14. a Groundwater Monitoring Program must be developed for the Facility and the Approval specifies the requirements of the program;
15. information for all groundwater sampling must be recorded, including specifics of temperature, pH, and specific conductance of each sample, and the information must be compiled and provided to the Director in an Annual Groundwater Monitoring Program Summary report. The report must include information on the groundwater testing program, underlying groundwater conditions, and recommendations for improving the groundwater monitoring program;
16. the Approval Holder cannot release or permit to be released digested sludge from the post digestion sludge storage tanks; and
17. undigested sludge or sludge from the SRM process cannot be composted outside, in the open.

[83] The Approval Holder submitted the level of groundwater protection contemplated by the Approval more than adequately ensures the groundwater is protected since there are multiple barriers to the entry of contaminants to the groundwater, no groundwater is utilized in the processes, and no substances are permitted to be returned to the ground.

[84] The Approval Holder stated the Facility does not utilize surface water and it does not return any water to the surface water system. It explained that even rainwater on the outside of the Facility does not enter the water system but instead is diverted and stored in the

Industrial Runoff and Stormwater Retention Pond, which is eventually pumped back into the Facility for use in the processes. The Approval Holder noted the Approval requires the Facility to be located at least 100 metres from Tongue Creek, and there cannot be any water released across land or into any water body.

[85] The Approval Holder submitted it is clear the Approval does not permit any interaction between the Facility and the surface water in the area and the processes permitted will not result in any interaction or effects on the surface water of the watershed or larger region.

[86] The Approval Holder stated the Facility is designed to operate in a safe manner for the following reasons:

1. no gases are stored;
2. there are stringent monitoring and reporting requirements regarding equipment calibrations;
3. there is required testing of the soil amendment;
4. sensors and high level alarms detect levels in each tank;
5. curbing will contain spills; and
6. reporting of all emissions is required.

[87] The Approval Holder noted that, should there be a contravention of the terms and conditions, the Approval requires the Approval Holder to notify the Director immediately. It explained it must submit a Complaint Management and Response Plan to the Director and update it annually.

[88] The Approval Holder explained the Complaint Management and Response Plan, must show how an emergency arising from an odour complaint will be dealt with. It explained the plan requires an odour complaint line be established, and upon receiving a concern on its complaint line or Alberta Environment's complaint line, the complaints will be reviewed and steps must be taken to record the prevailing conditions, including wind direction and speed, so the source of the odour can be determined. The Approval Holder said it must propose actions that it will take to resolve the complaint, give a description of how the sources of odour may have led to the complaint, and provide proposed timelines for responding to the complaint. It stated that, where the odour source was determined, steps must be taken to address the odour including follow-up actions to determine the effectiveness of the course of action and

documenting what steps will be taken to prevent the odour from becoming a problem in the future.

[89] The Approval Holder submitted that it is intent on making sure that appropriate emergency response measures are taken in the event an emergency occurs. However, the Approval Holder submitted any Emergency Response Plan must be considered in the context of the Facility, which is agricultural in nature and where there is no storage of any explosive substances, no treatment of airborne hazardous materials, and very little flammable material in the Facility.

[90] The Approval Holder submitted that, in light of the high standards of monitoring required by the Facility and the nature of the materials the Facility proposes to process, the terms and conditions in the Approval are appropriate.

[91] The Approval Holder submitted the terms and conditions of the Approval will ensure that little or no litter could possibly result from the Facility. It explained the Facility is self-contained, and the negative air pressure is designed to ensure that no debris or litter of any kind could blow out of the Facility. The Approval Holder explained trucks are washed while in the Facility to prevent litter from being transported outside the Facility.

[92] The Approval Holder stated it will keep very little feedstock onsite at any one time, so it would take little time to flush the system and begin disassembling the Facility, and the equipment inside the building could be safely removed and sold on the open market. It stated reclamation of the local environment would not be required because the Approval ensures no contaminants will be released into the soil, air, or water as a result of the construction and operation of the Facility. It noted the Approval contemplates steps that are to be taken to ensure the environment is protected should the Facility cease operations. The Approval Holder must notify the Director if the Approval Holder is petitioned into bankruptcy, files an assignment in bankruptcy, has a receiver or receiver-manager appointed, makes an application for protection from its creditors, or finds itself subject to seizure of any of its assets in the Approval.

[93] The Approval Holder noted that, should reclamation be required, it must submit a Decommissioning and Land Reclamation Plan to the Director within six months of ceasing operations and make an application to amend the Approval to reclaim the Facility.

[94] The Approval Holder stated the Approval terms and conditions ensure the Director remains confident of its solvency and provides for a prompt and thorough reclamation plan should the need arise.

[95] The Approval Holder stated the end product of the process is a nutrient soil amendment that is designed to be applied to soil. It noted the Approval ensures the soil amendment will be administered under strict conditions, and the properties of the soil amendment are carefully monitored to ensure it fulfills its designed purpose of improving the environment. The Approval Holder explained the soil amendment must be sampled and tested at least twice in the first year and at least annually thereafter to ensure its chemistry will not alter the soil or its ability to grow crops. It intends to administer the soil amendment to its own lands, so it has significant incentive to ensure the soil amendment does not damage the soil. The Approval Holder confirmed the soil amendment will not be applied to the Appellants' properties and, therefore, it is difficult to see how the Appellants have a concern with the soil on the Approval Holder's lands.

[96] The Approval Holder submitted the Approval adequately protects the environment, because no soil except that on which the soil amendment is administered will interact with any part of the Facility's process.

[97] The Approval Holder noted that terms and conditions in the Approval specifically consider air emissions from the Facility, including:

1. the construction of a biofiltration exhaust system 35 feet above grade and equipped with sampling facilities to monitor the quality of the air exiting the stack;
2. an emergency flare stack 30 feet above grade;
3. construction and operation of pollution abatement equipment including the biofiltration system and a central fugitive emission control system. The biofiltration system is constructed so that at any given time, it is only operating at 50 percent capacity, so while one biomedica is being serviced, the other biomedica can cope with the full amount of air being processed; and

4. the biofiltration system includes sampling stacks at the biomedica and the stack.

[98] The Approval Holder stated the biofiltration system emits air that contains no volatile organic compounds, reduced sulphur compounds, or nitrogenous compounds. The Approval Holder stated all emissions from the Facility are first run through the biofiltration system that is specifically designed to eliminate any components of concern.

[99] The Approval Holder explained the central fugitive emission control system must receive all emissions from the receiving and unloading area, organic resources storage tank, mix tank for manure and organic resources, animal by-product storage tank, thermal hydrolysis process building, and flash vent tank to the feed tank, and these emissions are diverted to the biofiltration system.

[100] The Approval Holder stated there will be no nuisance animals as a result of the Facility because the Facility is self-contained and all of its doors are to remain shut except for the entry and exiting of trucks. It said that wildlife cannot enter the building and noted the Approval does not allow any materials to exit the building so there is no concern that nuisance animals will be attracted by the Facility.

[101] The Approval Holder stated it cannot store feedstock outside the Facility, except in sealed units. It explained the feedstock is transported directly into the Facility under regulated conditions.

[102] The Approval Holder noted the Approval contains a section on Waste Management Operations that addresses:

1. the containers wastes can be transported in;
2. how the containers are to be stored in the Facility;
3. how incompatible wastes must be separated; and
4. what equipment must be disposed of at facilities holding a current approval, registration, or authorization under EPEA.

[103] The Approval Holder confirmed no waste, other than that which re-enters the Facility's processes, will be disposed of except at a waste management facility as set out in the Approval.

[104] The Approval Holder believed that, since the Facility is self-contained, there should not be any concern regarding weeds. The Approval Holder noted the Approval does not permit any feedstock outside the Facility except in sealed containers. In addition, the Approval Holder stated the negative pressure keeps any debris from exiting the building, and trucks must be washed prior to leaving the building.

[105] The Approval Holder said it underwent a rigorous and extensive approval process and worked with the Director throughout the process to ensure the Facility meets or exceeds all environmental standards and will make a valuable contribution to the environment by processing agricultural products. The Approval Holder stated it enlisted leading authorities in the area of design, consulted respected researchers, and worked with Federal and Provincial Governments to satisfy the decision makers that the Facility is both viable and environmentally appropriate.

[106] The Approval Holder argued the Appellants' concerns are unfounded given the strict terms and conditions in the Approval. It submitted the Approval is thorough and stringent in ensuring the environment of the region is protected from any adverse effects.

[107] The Approval Holder requested the Board recommend the Approval be confirmed as issued with the amendments suggested by the Director and included in Appendix A.

## **H. Director**

[108] The Director noted the Municipal District of Foothills advised the Director that it considered the Facility to fall under the grandfathering clause under general agricultural use as long as the biogas is not sold to the public, so no permits from the Municipal District are required.

[109] The Director explained a clerical error amendment regarding the legal land description for the Facility was done in August 2009, because the incorrect legal land description from the application was included in the Approval even though it had been corrected in November 2008.

[110] The Director stated there were discussions about changing some of the Approval Holder's composting sites from a registration to an approval, but the Approval Holder decided not to proceed with an application in this regard.

[111] The Director explained the Approval Holder provided additional information since the application was filed, including:

1. an analysis of various feedstock to be used to address concerns regarding metals and the potential effects on the nutrient soil amendment;
2. information confirming the Industrial Runoff and Stormwater Retention Pond was designed to meet the size requirement in the Approval;
3. as-built drawings for the Industrial Runoff and Stormwater Retention Pond system, including the drainage across the Facility and the pond. The information confirmed the pond liner was constructed to meet the Approval liner requirements, and this was confirmed in a Soil Survey Report filed under the Enforcement Order relating to the compost registration sites;
4. an Odour Management and Response Plan, which the Director reviewed. Several of the Appellants were given an opportunity to review and comment on the plan;
5. a regional flow assessment to address concerns that groundwater wells located west and south of the Facility could be impacted by activities at the site. The assessment indicated the regional groundwater flow is to the east, away from these wells;
6. a groundwater monitoring program proposal to satisfy conditions in the Approval. A deficiency letter from the Director was sent to the Approval Holder. The Approval Holder provided a response in May 2010, but there were deficiencies with the May response; and
7. a Groundwater Monitoring Program Interim Report based on a program that was never authorized by the Director under the Approval. A deficiency letter was sent to the Approval Holder in January 2011 with a response deadline of March 31, 2011.

[112] The Director confirmed the Facility needs an Approval to operate. He explained the Facility will treat feedstock anaerobically through biodigestion by microorganisms, and the biogas generated is collected and used as fuel while the remaining material (sludge) is further treated to produce a nutrient soil amendment. The Director stated the Approval regulates the potential releases from the Facility, including surface water runoff, groundwater seepage, air effluent streams, and material deposited on soils. The Director noted

the Approval only regulates the feedstock accepted into the process from the perspective of how such feedstock could affect any releases from the Facility.

[113] The Director stressed that changes to the Facility that could result in additional releases must be assessed to determine if an Approval amendment or authorization is required.

[114] The Director noted the Approval does not regulate:

1. the treatment processes within the Facility or the products the Facility produces, except where they may cause or lead to a release into the environment;
2. existing activities on the entire site, including the composting site registrations and feedlot approval;
3. the sources of the feedstock processed at the Facility; or
4. the sources of amendments that are added in the treatment process. “Amendments,” being the bulking and drying agents added to the treatment process, are not considered feedstock under the Approval.

[115] The Director noted the Approval defines “feedstock,” or the inputs into the treatment process, as the livestock manure, organic food resources, animal byproducts feedstock, and agricultural wastes, including glycerine, but was of the view that municipal biosolids should also be included in the definition. The Director explained the definition does not include all materials used in the process such as amendments to the process including drywall and wood chips.

[116] The Director noted there are some places in the Approval where “feedstock(s)” is incorrectly referred to as “wastes.” He explained “waste” means any solid or liquid outputs from the Facility that are intended to be disposed of, such as used oil, paint, and inert debris.

[117] The Director stated the Approval does not regulate how the various feedstock are produced at their sources. He said one source of feedstock may be the registered composting facilities operated by another company (Tongue Creek Feeders) owned by the owner of EcoAg, but the Approval does not regulate what takes place under those composting registrations, because those sites are governed by the provisions of *The Code of Practice for Compost Facilities*. Similarly, the Director stated the Approval does not regulate how municipal biosolids from Okotoks are produced as there is a different regulatory authorization that governs the municipality. The Director said the Approval only regulates feedstock once it arrives at the Facility.

[118] The Director stated condition 4.1.15 of the Approval requires all “feedstock” intended for the Facility to be stored in either the process building or closed tanker vessels.

[119] He explained the objective is to eliminate the potential for odours by ensuring any materials to be treated in the process are delivered:

1. directly into the building where negative pressure would capture any odours and direct them to the biofilter for treatment, prior to exhausting the air to the outside; or
2. be held in a vessel that does not allow odours to escape, until such time as they can be delivered into the building.

[120] The Director said the amendments (bulking and drying agents) would be expected to be delivered into the Facility on an as-needed basis, and whether the materials arrive from the existing local stockpiles or directly from another supplier is irrelevant, as long as the materials are delivered into the process building.

[121] The Director stated he was aware odours were an important issue because of the many public concerns about the existing operations located on the same land as the Facility.

[122] The Director said the air effluent emission sources included the biofilter exhaust stack, the reciprocating engine co-generation bypass exhaust stack, the emergency flare stack, and other fugitive emissions. The Director noted the facility is designed to ensure that air effluent releases from the Facility will be controlled.

[123] The Director explained the Facility must have a biofiltration system to which all ambient air within the Facility, including air from the process building, SRM building, the thermal hydrolysis area, unloading areas, and the identified tanks, is to be directed. He noted other effluent exhaust streams may also be directed to the biofiltration system.

[124] The Director explained the biofilter allows the growth of microorganisms that treat the air as it moves through the biofilter media. The Director stated that, since conditions within the biofilter must be maintained to ensure proper operation of the system, the Approval Holder is required to have an operations manual in place prior to commencement and operation of the biofilter.

[125] The Director noted the Approval requires the biofilter to have two chambers, each with enough capacity to accept and treat the volume of air delivered by the air handling

system, to ensure a high efficiency of emission control and continued operation in case the primary chamber's capacity is exceeded. He stated the 100 percent redundancy was required because the biofilter is critical to ensuring no odours escape the Facility. The Director said the biofilter will be located indoors to better control the environment within the media to enhance biological activity and reduce the potential for weather affecting the microorganism's treatment capabilities. The Director emphasized the Facility cannot operate unless the biofilter is operating properly, and the biofilter must be inspected weekly.

[126] The Director stated the efficiency and effectiveness of the biofilter to treat the exhaust air will be evaluated by a manual stack survey:

1. after the initial start up of the facility;
2. every 5 years;
3. after actions are taken to control odour due to any odour complaints that result from the Facility;
4. after modification to the biofilter; or
5. if required by Alberta Environment.

[127] The Director added the manual stack survey must be completed in accordance with the *Alberta Stack Sampling Code*, and the timing of the stack surveys is designed to demonstrate the performance of the biofilter:

1. initially, after the biological activity is established in the biofilter;
2. ongoing, at regular intervals; and
3. following any modifications to the biofilter.

[128] The Director explained the monitoring parameters required were determined based on:

1. approval requirements for a similar facility in Alberta which processes similar feedstock to produce biofuel to generate electricity; and
2. professional judgment based on the identified feedstock. There are no standard limits for in-stack concentrations of volatile organic compounds as a group, total reduced sulphur, or ammonia at a biogas facility.

[129] The Director explained that, in the event the biofilter cannot be properly operated to control odours, the Approval Holder will be required to replace it with a thermal destruction unit or equivalent technology. The Director stated that if this is required, and while

the thermal destruction unit or equivalent technology is installed, the Facility operation must be modified to control the odours, which could include reduced production or process specific effluent odour controls at specific vessels within the process.

[130] The Director explained that using biofilters to remove odorous substances from air emissions is standard equipment for this type of facility, and the technology has been used in Canada to treat air effluent from nutrient soil amendment facilities.

[131] The Director noted there are currently no Alberta Environment standards for regulating emissions from biofilters. The Director was of the opinion that it was sufficient that the Facility have the capacity to treat twice the volume of air directed to it. The Director stated the “extra capacity” approach has been applied to another biogas facility and a biodiesel facility in southern Alberta.

[132] The Director said he was aware that limits could be applied in the future, if needed, based upon the performance of the biofilter.

[133] The Director stated the odours from the Facility should be controlled by the fact that the activity authorized by the Approval will take place in an enclosed building instead of the open air operation that is currently used at the composting facility.

[134] The Director pointed out additional operational controls included in the Approval that will further control air emissions from the Facility include:

1. negative pressure in the receiving/unloading area of the process building so that odours do not escape from this area, because air will flow into the building rather than out of the building;
2. the Approval Holder shall not open the doors to the receiving/unloading area unless the air handling system does not allow odours to escape;
3. the doors to the process building must be kept closed at all times unless trucks are entering or leaving the building; and
4. feedstock intended for the Facility must be stored in the process building or in enclosed tanker vessels.

[135] The Director noted the Approval requires an Odour Complaint Management and Response Plan be developed to investigate complaints related to odours from the Facility and for the Approval Holder to take the appropriate steps to eliminate the odour and prevent the incident from happening again. The Director stated the Approval Holder is required to record

the date, time, wind direction, and wind speed at the time of any odour complaint to assist in determining whether the Facility could be the cause of the complaint. The Director stated the Odour Complaint Management and Response Plan would require the Approval Holder to talk with the complainants in a timely manner and ratify how the complaint was addressed.

[136] The Director said the Approval Holder has prepared and provided an Odour Complaint Management and Response Plan, and members of the public were given the opportunity to review and comment on it. The plan must be updated annually to ensure continuous improvement and effectiveness of the plan.

[137] The Director also required an Odour Reduction Plan, which requires the Approval Holder to control sources of offensive odours, such as the removal of “waste streams” from the process that could potentially be causing the odour or reducing the amount of material being fed into the process to reduce loadings to the biofilter. There have been no Odour Reduction Plan actions to date, because the Facility is not operational.

[138] The Director added an additional condition to address emissions even though this type of provision is generally only included in approvals to address fugitive emissions. The Director expanded the scope of the condition to include approved emissions in direct response to the public concerns. The condition requires that the Facility must not release any emissions from the building, including fugitive emission sources or any of the approved emission sources that cause any of the following:

1. impairment, degradation, or alteration of the quality of natural resources;
2. material discomfort, harm, or adverse affect to the well being or health of a person; or
3. harm to property or to plant or animal life.

[139] The Director stated there are two additional stacks for the Facility other than the biofilter exhaust stack: the reciprocating engine co-generation bypass exhaust stack and the emergency flare stack. The Director said these other two stacks are not expected to be significant emission sources.

[140] The Director explained emissions from the reciprocating engine can either be directed to the process to enhance drying or, if the heat is not needed, the emissions will go to the reciprocating engine co-generation bypass exhaust stack.

[141] The Director noted there are no standards for regulating emissions for this type of engine when powered by biogas, but it is Alberta Environment's practice to require the Approval Holder to demonstrate any new or improved natural gas driven reciprocating engine, larger than 600 kilowatts, would emit less than 6 grams of nitrogen oxide (NOx) per kilowatt hour, prior to allowing it to be used. The Director stated that no ongoing monitoring would be required.

[142] The Director submitted the Board should recommend the Approval be varied to require the Approval Holder to demonstrate to the satisfaction of the Director that air effluent emissions from any reciprocating engine used that exceeded 600 kilowatts for co-generation at the Facility, will emit less than 6 grams of NOx per kilowatt per hour.

[143] The Director stated that, during emergencies, the biogas will be directed to a flare stack to ensure complete destruction of odourous emissions. He explained that, since the Facility does not flare sour gas, no flare stack limit was applied.

[144] The Director noted the Approval Holder is required to submit an Annual Air Emissions Report to address odour from the facility.

[145] The Director stated the primary public concern regarding water was related to the potential impacts to the surface water and groundwater from the activities at the Facility. He explained the Approval provides various levels of protection, including:

1. Industrial Runoff and Stormwater Retention Pond;
2. secondary containment;
3. operational controls;
4. zero discharge of industrial wastewater; and
5. Groundwater Monitoring Program.

[146] The Director said the Industrial Runoff and Stormwater Retention Pond is intended to hold the precipitation that falls onto or crosses the Facility's outside areas and store the runoff in an engineered pond. The Director stated the runoff will not find its way onto other operations on the site or into Tongue Creek.

[147] The Director explained there were various levels of protection built into the Industrial Runoff and Stormwater Retention Pond system:

1. The system is required to collect and store a one in one-hundred-year (1:100 yr), 24-hour storm event.
2. The capacity is more than is typically required for this type of Facility. The *Guide to Content of Industrial Approval Applications* requires capacity for a one in 25-year (1:25 yr), 24-hour storm event.
3. The setback of the pond to Tongue Creek is 100 metres to be more protective. There is no standard for a setback requirement for a runoff pond to a water body at this type of Facility. The *Standards for Compost Facilities in Alberta* requires a 30 metre set back for a compost facility from a water body.
4. The Approval Holder must comply with the *Standards and Guidelines for Municipal Water Wastewater and Storm Drainage Systems* with respect to the clay liner of the pond. This relates to thickness, permeability, liner material, and construction method. To ensure the integrity of the liner system of the pond, an as-constructed liner quality report was required, which was provided and verified the pond liner exceeds requirements.
5. Any water used for land application must meet the “safe for all conditions” irrigation criteria from *Alberta Environment’s Guideline for Municipal Wastewater Irrigation-Section 2*.
6. Any water collected into the pond cannot be released into Tongue Creek. The Approval limits releases from the pond as follows:
  - i. recycle back into the process building of the Facility;
  - ii. to an EPEA regulated waste water treatment plant;
  - iii. by land application, if required criteria are met; or
  - iv. as authorized in writing by the Director.

[148] The Director recommended the Approval be modified to provide clarity in the definitions, the pond features, and additional testing parameters of the runoff water.

[149] The Director noted that another level of protection is the requirement for a secondary containment system for all tanks, reactors, drums, and vessels in the process building.

[150] The Director explained it is Alberta Environment’s practice to apply the criteria listed in the *Guidelines for Secondary Containment for Above Ground Storage Tanks* if a vessel is to store or contain a liquid that could adversely affect the environment. He noted the

specific requirements for secondary containment are: a sloped concrete floor with berms and a sump; and a capacity capable of containing 110 percent of the volume of the largest tank plus 10 percent of the aggregate capacity of all other storage containment tanks, drums, reactors, and vessels.

[151] The Director stated the Approval has specific operating controls that require trucks and tanker trucks to be washed, if necessary, so that wastes are not tracked outside the unloading area of the process building and the SRM building.

[152] The Director explained the Facility will have no discharge of industrial wastewater; the industrial wastewater will not go into the Industrial Runoff and Stormwater Retention Pond but will stay within the buildings, be collected in the organic resources storage tank, and be recycled back into the process.

[153] The Director required the Approval Holder to develop a Groundwater Monitoring Program for the Facility even though this type of activity typically would not require a groundwater monitoring program given:

1. the nature of the facility;
2. feedstock is delivered into the process building;
3. the process is contained in vessels on concrete floors with secondary containment; and
4. industrial wastewater is collected and recycled within the process building.

The Director said the groundwater monitoring requirement was included in response to the concerns expressed by area residents and statement of concern filers.

[154] The Director noted the minimum requirements for the Groundwater Monitoring Program are set out in the Approval. The Approval Holder must:

1. determine the hydrogeology at the Facility;
2. identify any changes to the hydrogeology as a result of the Facility operations over time through a monitoring program; and
3. prepare a response plan.

[155] The Director stated the Approval Holder is required to develop the Groundwater Monitoring Program and then implement the program authorized by the Director.

[156] The Director set out the following areas of concern with the information provided by the Approval Holder in the development of its Groundwater Monitoring Program:

1. the information does not enable a conclusive understanding of the hydrogeology at the Facility prior to commencing operations nor of the existing background conditions; and
2. understanding the hydrogeology at the Facility prior to commencing operations is important in understanding whether the Facility will have contributed to any hydrogeological concerns that may arise in the future.

[157] The Director noted the data provided suggest:

1. bedrock exists anywhere from 8.4 to 13.7 metres below the ground;
2. a domestic use aquifer has been identified in the bedrock;
3. local groundwater flow “appears to be” towards the east;
4. groundwater “appears to be” at least 4 metres below the ground; and
5. there “appear to be” several parameters that exceed *Alberta Tier 1 Soil and Groundwater Remediation Guidelines*.

[158] The Director stated the Groundwater Monitoring Program, once authorized, will provide for the exact scope of the program. The Director noted the Approval requires an Annual Groundwater Monitoring Summary Report.

[159] The Director stated the impacts the Facility can have on land relate to the application of the final product on lands owned or controlled by the Approval Holder or its affiliates. The Director said the Approval Holder will store the nutrient soil amendment product in silos at the Facility and, given the nature of the activity, the Director did not consider there to be a risk to soils at the Facility that requires regulation under the Approval. The Director noted the Approval authorizes the application of excess nutrient soil amendment to lands owned or controlled by the Approval Holder or its affiliates provided the Approval conditions are met.

[160] The Director asked the Board to recommend the Approval be varied to clarify aspects of the nutrient soil amendment, including what can be applied and under what conditions.

[161] The Director noted the Approval requires:

1. testing of the nutrient soil amendment annually and when a new feedstock is introduced into the process; and

2. testing of the soil at application sites, prior to the first application, prior to the second application, and every third year thereafter.

[162] The Director explained the purpose of these testing provisions is to ensure the land application of the soil amendment is at loading rates that do not adversely affect the soil or the groundwater.

[163] The Director stated the monitoring requirements and limits were determined based in part on the requirements of the *Guidelines for the Application of Municipal Wastewater Sludges to Agricultural Lands-Section 2* and Alberta Environment's *Guidelines for Municipal Wastewater Irrigation-Section 3*, because there is no specific standard for regulating the application of a nutrient soil amendment to agricultural land. The Director explained the low mobility of the nutrient soil amendment (a dry material) versus the higher mobility of sludge or wastewater was considered when determining these provisions. The Director stated the parameters to be monitored were based on the Alberta Environment *Guideline for Municipal Wastewater Irrigation-Section 3*, and the depth of sampling and spatial distribution at the application sites were determined based on the *Guideline for the Application of Municipal Wastewater Sludges to Agricultural Lands-Section 2*, with modifications.

[164] The Director proposed modifications to the Approval regarding soil sampling depths and additional soil analytical requirements.

[165] The Director noted the Approval contains a number of provisions that restrict the application of the nutrient soil amendment on the Approval Holder's or its affiliates' land to ensure there is no adverse effect on land, air, water, or human health. The Director also noted the Approval requires the submission of an Annual Nutrient Soil Amendment Land Application Report.

[166] The Director explained the waste provisions in the Approval are the standard requirements for any other industrial facility in Alberta.

[167] The Director was of the opinion the self-contained nature of the Facility located within a closed building will not provide any "food sources" for nuisance animals.

[168] The Director stated the Approval was issued for a term of 5 years even though the standard term is 10 years as per the *Environmental Protection and Enhancement (Miscellaneous) Regulation*, Alta. Reg. 118/93. The Director explained he set the term for 5

years to allow the Approval Holder sufficient time to construct the Facility, demonstrate the effectiveness of the emission control features of the Facility, and address any operational challenges with the Facility.

[169] The Director stated the biofiltration system technologies, while not new, have been demonstrated to work but were not part of the pilot project conducted by the Approval Holder. With the heightened public concerns regarding odours from the other operations on the lands, the Director was of the opinion the proper functioning and shorter term scrutiny of the biofiltration system was necessary.

[170] The Director noted the Approval Holder will have to apply for a renewal of the Approval prior to the expiry date, and during the Approval renewal process, the Facility would be evaluated based upon its past performance. The Director confirmed the renewal application would be subject to statutory public notice requirements, and the renewal decision would be appealable to the Environmental Appeals Board.

[171] The Director explained the *Waste Control Regulation*, Alta. Reg. 192/96, sets out the requirement for security for an approved waste management facility. The Director noted Part 5 of the Approval sets out the financial security requirements, and it provides that he can request additional financial security. The Director confirmed the Approval Holder has provided the required \$10,000 security.

[172] The Director explained the \$10,000 amount was based on the estimated cost of conducting a Phase I and Phase II assessment of the Facility's site. The Director said the amount took into consideration the fact there would be groundwater monitoring wells already in existence at the site and that there were minimal risks of contamination from this activity.

[173] The Director said he was mindful of the various provisions of EPEA that could apply to this activity, including:

1. the Director's unilateral powers to make monitoring and reporting amendments;
2. the Director's unilateral powers to make amendments to the Approval if an adverse effect that was not reasonably foreseeable at the time of issuance was taking or could take place;
3. the Director's ability to issue environmental protection orders and enforcement orders; and

4. the provisions of EPEA on substance release.

[174] The Director submitted the Approval should be confirmed, subject to the amendments he proposed.

### **III. ANALYSIS**

#### **A. Preliminary Matter**

[175] Prior to the start of the Hearing, the Approval Holder raised a motion arguing the photographs included in the submissions filed by the Cowlings and Jeffers and the Zeers were not properly before the Board. The Approval Holder argued there was no indication of who took the photographs, when they were taken, or the purpose of taking the pictures. The Approval Holder argued the photographs did not go to any facts that would determine the issues under appeal because the photographs were taken before the Facility was constructed. The Approval Holder argued the photographs were more prejudicial than probative and asked the Board to direct that they are inadmissible.

[176] The Director took no position.

[177] The Cowlings and Jeffers explained Ms. Lisa Cowling took the photographs and she would be called as a witness, so if the Approval Holder had any questions regarding the pictures, it could cross-examine Ms. Cowling. The Zeers explained the photographs demonstrated how the aesthetics in the area have already been impacted. The other Appellants supported having the photographs remain as part of the submissions.

[178] After considering the arguments and the photographs, the Board determined the photographs were admissible and the application to have them excluded was dismissed. The Board is not bound by the strict rules of evidence that are applicable in a judicial proceeding. The Board can assess the photographs as it would any other piece of evidence and determine the relevance and proper weight to be given. The Approval Holder had the opportunity to question the photographers during the Hearing if it had concerns with the photographs. The Board noted the Approval Holder had no issue with aerial photographs submitted by the Director that clearly outlined the existing facilities as well as the biogas Facility.<sup>8</sup>

---

<sup>8</sup> See: Exhibits 1 and 2 from the Hearing.

## **B. Substantive Issues**

[179] Under section 99 of EPEA, the Board can recommend to the Minister whether the Approval should be confirmed, reversed, or varied. For the following reasons, the Board recommends the Approval be varied.

[180] In order to appreciate the concerns of the Appellants, it is important to understand the location of the Facility. On the same quarter section of land on which the Facility is located and directly north is a feedlot operating under an authorization issued by the NRCB. To the north of the feedlot is a compost facility, which operates under a Code of Practice pursuant to a Registration issued by Alberta Environment. All three of these facilities operate (or in the case of the Facility, will operate) under different registered companies each of which has the same owner. There is no doubt the feedlot and composting operations are connected to the Facility, since feedstock and water from their retention ponds are part of the inputs into the Facility. The Appellants noted the “labyrinth” of regulatory agencies involved with the operations on just this quarter section of land. The Director issued the Approval for the Facility and the Registration for the composting facility; the NRCB oversees the operations of the feedlot; and within the composting facility is an area that is subject to the jurisdiction of the Canadian Food Inspection Agency (the area dealing with SRM). The Board appreciates the difficulties the Appellants, and to some extent the Approval Holder, must have in dealing with this myriad of regulations and regulatory bodies. However, the Approval that is under appeal is for the Facility only and, although the interconnectedness was evident, the Board does not have the jurisdiction to consider how the feedlot and composting facility are operated.

[181] In his submission, the Director suggested a number of amendments to the Approval. Some of these amendments resulted from ongoing discussions between the Approval Holder and the Director that brought certain inconsistencies and a lack of clarity to light. When asked by the Board, neither the Approval Holder nor the Appellants had concerns with the suggested amendments. The Board reviewed the suggested amendments. Many of the amendments clarify definitions of terms and ensure consistent use of the defined terms throughout the Approval. The suggested amendments also include clarification of the required tests, sampling methods, and parameters for assessing groundwater and soils. The changes suggested by the Director are set out in Appendix A.

[182] These changes will benefit the Approval Holder since there will be less ambiguity as to what is expected to ensure compliance with the Approval. The Board believes the suggested amendments are reasonable and will improve the transparency of what is expected of the Approval Holder and increases awareness for the Appellants. Therefore, the Board recommends the Approval be varied to incorporate all of the suggested changes noted in Appendix A.

[183] There was much discussion regarding the type of process that will be used in the Facility. The application and Approval described only mesophilic and thermophilic processes for treating the feedstock that comes into the Facility. However, the Approval Holder now appears to be considering using a psychrophilic process which involves using lower temperatures for a longer period of time to destroy organisms found in the feedstock. Although in its oral evidence the Approval Holder stated it did not intend to operate the Facility using a psychrophilic process, documents in the Record show the Approval Holder is at least considering this option.<sup>9</sup> The Approval allows the Director to authorize changes to the process without public notice. Since the impact of changing the type of process used is not clear, the Board considers it appropriate in this case to recommend a condition be added to the Approval that would require the Approval Holder to apply for an amendment to the Approval should it want to change the process used in the Facility. This would necessitate the amendment to go through the public notice process, which would allow Statements of Concern to be filed, and the potential right to file a Notice of Appeal.

[184] The Appellants raised a number of issues including odours, air emissions, litter, noise, aesthetics, nuisance animals, groundwater, surface water, weeds, soil impacts, reclamation, and the need for an emergency response plan.

[185] There has been a long history of odour complaints in the area; the Appellants explained they have contacted Alberta Environment on numerous occasions regarding odours in the area. The Approval Holder also acknowledged past incidences that led to stronger odours coming from the lands where the Facility is located. The Approval Holder explained one incident was the result of the draining of a pond that had become anaerobic and the water

---

<sup>9</sup> See: Tab 33 of the August 3, 2010 to September 9, 2010 Record, where, in an e-mail to the Alberta Environment, the Approval Holder stated "This is the system that we are installing..." and attached information on the low temperature anaerobic digestion process.

was used for irrigation. A second incident occurred when certain wastes were accepted at the composting facility. Upon discovery of the problem, these wastes are no longer accepted into the composting facility. There is no doubt the odours the Appellants have been complaining about could not have been a result of the Facility, because the Facility is not yet operational. The Appellants' concerns are that the Facility could exacerbate the existing odour problem. The Approval Holder explained the odours should be reduced once the Facility becomes operational since all wastes, other than manure and dry wastes, will be routed directly into the Facility and not to the compost facility.

[186] The Board is of the view based on the evidence presented that, if the Facility is built, operated, and maintained as described in the application and as required under the Approval, environmental conditions in the area should improve rather than worsen. The intent of the Facility is to move the feedstock, including the feedstock causing past odours and attracting nuisance animals, into a closed building. Wastes, other than manure and dry products such as drywall and woodchips, will no longer have to be put into the composting facility. Although this may not eliminate all odours emanating from the feedlot, such odours should be reduced to what would be expected from a conventional feedlot operation.

[187] The Approval Holder explained how it has established an odour complaint line where calls are taken and messages relayed to its employees. If there is a legitimate complaint, the Approval Holder is required to take steps to mitigate the cause of the odour. Condition 4.1.26 of the Approval requires the Approval Holder to take certain actions to control the source of offensive odours. Under condition 4.1.27, if the odours persist for one month after all of the actions in condition 4.1.26 have been completed, then the Approval Holder has to replace the biofilter system. Although the Director imposed a one month deadline in condition 4.1.27, the offensive odours could persist for an indefinite period of time while the steps in condition 4.1.26 are attempted. As a result, the Board recommends the Approval be varied to include a condition requiring the Approval Holder to complete the actions in condition 4.1.26 within two weeks and, if additional time is required, it will be at the Director's discretion.

[188] The biofilter uses technology that has been shown to be effective in other facilities in reducing odours and other air emissions. The air in the Facility must travel through the biofilter before it is released outside. The important aspect of the biofilter is that it must be

operated and maintained correctly to optimize its effectiveness. The Approval Holder confirmed an operators' manual will be produced and the operators will be trained. Since the biofilter is such an important part of the successful operation of the Facility, the Approval Holder should ensure the operators are continually reminded of the correct operating procedures and procedures should be in place to confirm procedures are being followed.

[189] In response to questioning from the Board, the Director noted that, on a site visit conducted prior to the Hearing, the biofilter was not installed in the Facility at the location as described in the application and incorporated in the Approval. The Director subsequently directed the Approval Holder to relocate the biofilter to the location identified in the Approval. Since the Appellants have concerns regarding the Approval Holder's willingness to abide by the terms and conditions of the Approval, and given the actions of the Approval Holder in this case, the Board recommends the Director conduct a compliance audit prior to the start of the operation of the Facility. The Board recommends the Approval be varied to require the Approval Holder to notify the Director two weeks prior to the start of the operation of the Facility to allow the Director or his representative to conduct a compliance audit of the Facility.

[190] The Appellants raised the issues of litter and weeds, problems they are dealing with now from the site. All of the feedstock will be unloaded from the trucks inside the building. The doors are closed prior to the vehicles being emptied, and the negative pressure within the building is designed to prevent anything from leaving the building. This should reduce the possibility of litter being blown off the site. In the past, the Approval Holder has picked up litter from neighbouring properties when it received a complaint. The Board anticipates the Approval Holder will continue to do this if litter is blown off the trucks while traveling to the Facility. If litter blowing off of the vehicles traveling to the Facility becomes an issue, the Approval Holder should require, if it has not already done so, that all loads be covered or tarped. Weeds around the Facility, should they prove to be a nuisance to neighbouring properties, should be reported to the Municipal District, which has authority to take measures to prevent their proliferation.

[191] The Appellants expressed concerns regarding potential noise from the Facility. The actual processing of feedstock will take place within a closed building, and the doors are to remain shut except for brief times to allow trucks to enter or exit the building. The generators and other machinery are located within the building, which will be insulated. Therefore, the Board believes there should be minimal noise emanating from the Facility. Occasionally the flaring stacks may be used, but the noise from the flaring stacks would not be continuous and as the stacks do not burn at high pressures, the noise level should be relatively low and should not cause major disturbance to neighbours.

[192] Aesthetics was an issue raised by the Appellants. The Facility is housed in a building in the same location where a pre-existing building stood. It is behind other farm structures, so the Facility building itself should not be an issue. With decreased litter coming from the properties and a reduction in odours from the composting facility, the aesthetics of the site should improve.

[193] All feedstock is to be transported into and stored in the closed building or in closed vessels outside the building. This should minimize odours in the area and should not attract nuisance animals, and, as the feedstock will no longer be going into the composting facility, there will be a decrease in the food sources that attract the nuisance animals. Therefore, nuisance animals should also become less of a concern with the operation of the Facility.

[194] The Appellants argued the clay liner system in the retention pond would be inadequate to prevent seepage. Based on the evidence provided, the Board considers the clay liner an appropriate liner for the retention pond providing it is properly designed, installed, and maintained. This may be one of the issues the Director can consider during his compliance audit.

[195] The Director explained the process that will be used in the Facility, including the negative pressure building with concrete flooring, sumps, and secondary containment, will minimize the risk that contaminants will enter the groundwater or surface water. Even with these structures in place, the Director included in the Approval additional conditions to assure that surface water and groundwater will not be impacted by the operation of the Facility.

[196] In the Approval, the Director required a Groundwater Monitoring Program to be submitted by the Approval Holder. The Approval Holder submitted a plan to the Director, but there were a number of deficiencies that have to be corrected prior to the Director accepting the document as being complete. Although not specified in the Approval, the Director stated it was his intention that the plan would be provided and approved by him prior to the Facility becoming operational. It is reasonable to expect the plan to be approved prior to the Facility accepting feedstock. This would provide a baseline for water quality around the Facility. Even though water quality may have been impacted by previous activities on the site, establishing the existing conditions prior to start-up of the Facility will provide a baseline to determine if the Facility is having an effect on water quality. If there is no effect, which is the Approval Holder's contention, then it would have the basis to demonstrate no effect. Therefore, the Board recommends the Approval be varied to include a condition requiring the Approval Holder to submit a Groundwater Monitoring Program to the Director for his approval. If approved, the Approval Holder must implement the program prior to the Facility becoming operational.

[197] There was some indication in the evidence presented that the groundwater around the Facility may be contaminated already as a result of prior operations on the site. Although the data are inconclusive at this time, some of the Appellants suggested their wells have been impacted by the operations at this site. If the Appellants can show there is a link between the impacts on their wells and the neighbouring operations, they can contact Alberta Environment to investigate further. However, for the purposes of these appeals, it is obvious the Facility cannot be the source of the possible existing contamination since it is not yet operational.

[198] The Approval Holder explained water may be transferred from retention ponds at the compost facility and feedlot to the Facility. The Approval Holder and Director should ensure all necessary approvals are in place prior to enable the transfer of this water to the Facility.

[199] The soil nutrient amendment will be used on the Approval Holder's land or its affiliates' land or it will be sold to other landowners and companies. The Approval included conditions that have to be met prior to the application of the amendment onto the Approval

Holder's properties. The Director explained that, even though these sorts of conditions are not usually included in approvals for these types of facilities, he believed it was warranted in this case given the concerns of adjacent landowners. The Approval Holder had the opportunity to express its concerns with these conditions during the drafting of the Approval and did not do so. Therefore, it appears the Approval Holder has no concerns with meeting these requirements. It also provides the Approval Holder and neighbouring landowners some assurance that the soil nutrient amendment will be applied correctly, will not cause deterioration of the soils and will not affect adjacent properties.

[200] The Approval Holder was required to and did provide \$10,000.00 in security for reclamation of the site. The Appellants argued this amount was significantly less than what would be required to conduct a Phase I and Phase II site assessment. Under the Approval, the Director can require the Approval Holder to provide additional financial security if the Director believes the circumstances warrant it. In assessing the amount of security required, the Director took into consideration the activities will be in a closed building and, if the Facility stops operating, the machinery can be dismantled and sold, and the building could be used for other purposes. In this instance, the Board considers the \$10,000.00 security to be adequate at present, with the Director having the discretion to require additional security.

[201] The Approval Holder explained it has developed an emergency response plan even though it is not required. The Approval Holder stated it has provided the draft document to the Director and the Municipal District of Foothills for review. The Board believes it is prudent for the Approval Holder to have an effective emergency response plan in place prior to the start of Facility operations. Since the Approval Holder already has a draft of the plan, it should not be an onerous task for the Approval Holder to finalize the document with input from the Director and the Municipal District of Foothills. The emergency response plan should also be provided to all residents within a three-kilometre radius of the Facility so they will know what actions the Approval Holder will take if an emergency occurs, and they will know what they should do in these circumstances. Therefore, the Board recommends the Approval be varied to require the Approval Holder submit an emergency response plan to the Director for his approval and implement the approved plan prior to the Facility starting operations.

[202] The written and oral evidence of the Appellants indicated a level of mistrust of the Approval Holder and its related companies. The Board was encouraged by the evidence of the Approval Holder in response to a question from the Board, that the Approval Holder is taking steps to improve its relationships with its neighbours. The Board encourages this process to continue.

[203] The Board recognizes the efforts taken by the Director to address the concerns of the Appellants and others living in the area of the Facility. Although not required for this type of Facility, the Director added a condition requiring the Approval Holder to provide a Groundwater Monitoring Program. The Director also required the Approval Holder to double the capacity of the biofilter so that if one chamber is offline for maintenance or replacement, there is another chamber that can handle the total capacity of air moving through the system. He also included requirements related to the application of the soil nutrient amendment on the Approval Holder's and its affiliates' lands. These are preventative measures intended to minimize risks to the Appellants.

[204] In his evidence, the Director explained his willingness to take steps to ensure the residents and landowners within a three-kilometre radius of the Facility will be notified directly of any future amendment applications or renewal applications. To ensure the Approval will be handled in this manner, the Board recommends the Approval be amended to include this stipulation as a condition of the Approval. The Board notes that, although this will be a condition for the duration of the Approval, the Director will determine whether the stipulation should be carried over into any future approval for the Facility.

[205] Although the Board does not have jurisdiction to consider how the composting facility operates, many of the issues raised by the Appellants are a result of past activities at the composting facility. In its evidence, the Approval Holder explained wastes that are now added to the composting facility will be diverted to the biogas Facility when it is operating. As a result, the composting facility will only be accepting composting materials as defined in the *Agricultural Operation Practices Act*, R.S.A. 2000, c. A-7 ("AOPA") similar to what is

occurring in conventional feedlots.<sup>10</sup> This type of composting activity does not require a registration with Alberta Environment.

[206] The Approval Holder stated that, within 18 months, it will no longer be receiving paunch material from the Cargill facility near High River. At the present time, the paunch is being composted at the composting facility but, when the Facility starts operations, it will be used as a feedstock in the biogas process. To ensure these types of wastes and municipal wastewater biosolids will no longer be used at the composting facility, the Board is recommending the Director use his authority under section 70(3)(b) of EPEA to cancel the Registration held by Tongue Creek Feeders for the composting facility operating on the SE 16-19-1 W5M within 18 months of the Minister issuing his decision. Since Tongue Creek Feeders would only be accepting composting material as defined in AOPA at this composting site, its operations would not be affected by the cancellation of the Registration. The Approval Holder stated this was its intent at the Hearing. This would also greatly assist neighbouring residents in determining the likely source of any noxious odours, should they occur, after the Facility begins operating. It would also provide some assurance to the Appellants that other wastes would not be added to the composting facility if the biogas Facility had a surplus of feedstock.

#### **IV. RECOMMENDATIONS**

[207] The Board recommends the Approval be varied as outlined in Appendix A. In addition, the Board recommends additional conditions be added to the Approval that:

1. remove the ability of the Director to authorize changes to the process used in the Facility without requiring an amendment to the Approval, and require the Approval Holder to apply for an amendment to the Approval if it wants to change the process that it is using such that the public notice provisions of EPEA are triggered;
2. if an odour complaint is received that requires the Approval Holder to take the steps to stop offensive odours as required under the Approval, all such steps

---

<sup>10</sup> Section 2 (b.53) of AOPA defines “composting materials” as “organic material generated by an agricultural operation described in clause (b)(ii), (iv), (v) or (vi), other than carcasses or parts of carcasses, and includes other substances permitted by the regulations.”

must be taken within two weeks of receiving the odour complaint, unless the Director grants an extension;

3. require the Approval Holder to contact the Director two weeks prior to starting operations at the Facility to allow the Director to conduct a compliance audit to ensure the Approval Holder has complied with the conditions in the Approval;
4. require the Approval Holder to submit and implement a Groundwater Monitoring Program acceptable to the Director prior to the Facility starting its operations;
5. require the Approval Holder to develop, submit, and implement an Emergency Response Plan acceptable to the Director prior to the Facility starting operations; and
6. require all landowners and residents within a three-kilometre radius of the Facility be notified directly if any amendment applications or renewal applications are submitted to Alberta Environment.

[208] With respect to sections 100(2) and 103 of EPEA, the Board recommends that copies of this Report and Recommendations, and of any decision by the Minister, be sent to the following:

1. Ms. Teresa Meadows, on behalf of Mr. Bruce and Ms. Marcia Jeffers and Mr. Robert and Ms. Lisa Cowling;
2. Mr. Bernie and Ms. Margie Brown;
3. Mr. Kent and Ms. Ingrid Vipond;
4. Mr. Ian and Ms. Corrinne Zeer;
5. Mr. Jesse, Ms. Sarah, and Mr. Harji Hari;
6. Ms. Charlene Graham and Mr. Andrew Bachelder, Alberta Justice, on behalf of the Director, Southern Region, Environmental Management, Alberta Environment;
7. Mr. Kelly Nicholson and Mr. Jase Cowan, Field LLP, on behalf of EcoAg Initiatives Inc.; and
8. Mr. Ian and Ms. Laurie Currie.

[209] The Jeffers and Cowlings and the Approval Holder reserved their right to submit final costs applications. The Board requests that an application for costs be provided to the Board within two weeks of the date of the Minister's Order with respect to this Report and Recommendations. The Board will then provide the Parties with information regarding the submission process should a costs application be made.

Dated on March 11, 2011, at Edmonton, Alberta.

*“original signed by”*

---

Alex G. MacWilliam  
Panel Chair

*“original signed by”*

---

Jim Barlishen  
Board Member

*“original signed by”*

---

A.J. Fox  
Board Member

**Appendix A: Recommended Amendments to Approval**  
as per Alberta Environment  
(some editorial revisions made by the Board)

1. Condition 1.1.2(k) is repealed and replaced with the following:  

“1.1.2(k) “degasser vessel” means the vessels, as described in the application, that helps the biogas be pushed or pressed out of the biomass at a faster rate with sparging of the effluent;”.
2. Condition 1.1.2(q) is repealed.
3. Condition 1.1.2(t) is repealed and replaced with the following:  

“1.1.2(t) “feedstock” means livestock manure, treated or semi-treated municipal bio-solids, organic food resources, animal by-products, agricultural wastes and includes glycerine, as described in the application;”.
4. The following is added after 1.1.2(t):  

“1.1.2(t.1) “Fertilizers Act” means federal *Fertilizers Act*, R.S.C. 1985, c. F-10;”.
5. Condition 1.1.2(y) is repealed and replaced with the following:  

“1.1.2(y) “industrial runoff” means precipitation that falls on or traverses the facility developed area;”.
6. Condition 1.1.2(aa) is repealed and replaced with the following:  

“1.1.2(aa) “industrial wastewater” means the composite of liquid wastes and water-carried wastes, any portion of which results from any industrial process carried on at the facility;”.
7. The following is added after condition 1.1.2(ff):  

“1.1.2(ff.1) “nutrient soil amendment” means the solid material produced at the facility that meets the requirements of the Fertilizers Act for a fertilizer or supplement;

1.1.2(ff.2) “off-spec materials” means any solid material produced by the facility that was intended to meet, but does not meet the requirements of the Fertilizers Act allowing the material to be sold as a nutrient soil amendment;”.

8. The following is added after condition 2.3.1(iii)(B):

“2.3.1(iv) for soil:

- (A) *Soil Sampling and Methods of Analysis*, Lewis Publishers, 1993, as amended;
- (B) the *Test Methods for Evaluating Solid Waste, Physical/Chemicals Methods*, USEPA, SW-846, September 1986, as amended;
- (C) the *Soil Quality Criteria Relative to Disturbance and Reclamation*, Alberta Agriculture, March 1987, as amended;
- (D) the *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites – Volume I: Main Report*, CCME EPC-NCS62E, 1993, as amended; and
- (E) the *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites – Volume II: Analytical Method Summaries*, CCME EPC-NCS66E, 1993, as amended.”

9. Condition 3.1.3 is repealed and replaced with the following:

“3.13 The approval holder shall notify the Director in writing at least 14 days before commencing operations of the reciprocating co-generation unit portion of the facility.”.

10. Condition 3.2.8 is repealed and replaced with the following:

“3.2.8 The approval holder shall construct an air handling system in the receiving and unloading building as described in the application to operate the building under sufficient negative pressure to prevent any odours from within the building escaping outdoors.”.

11. Condition 3.3.1 is repealed and replaced with the following:

“3.3.1 The approval holder shall construct an industrial runoff and storm water retention pond system by November 30, 2009 that includes, at a minimum, all of the following:

- (a) a control system for areas of potential spills or leaks on the facility developed area, including any loading docks or waste storage areas;
- (b) dykes or other containments for the control system in (a), so that the surrounding watershed and groundwater are protected from contamination;
- (c) an industrial runoff and storm water retention pond that includes at minimum all of the following:
  - (i) a storage capacity capable of holding the volume of water resulting from a 1-in-100 year, 24 hour storm event for the area;
  - (ii) a compacted clay liner system for the pond that includes all of the following:
    - (A) a minimum thickness of 1.00 metre;
    - (B) is constructed in lifts no more than 150 mm thickness;

- (C) a 98% Standard Proctor Density at 2-3% optimum moisture content; and
- (D) a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less; and
- (d) infrastructure that allows the approval holder to pump the contents of the pond into the process building to be used as process water.”.

12. The following is added after condition 4.1.6:

“4.1.6.1 The approval holder shall demonstrate to the satisfaction of the Director that air effluent emissions from any reciprocating engine greater than 600 kilowatts at full load, used for co-generation at the facility will emit less than 6 grams NO<sub>x</sub> per kilowatt per hour, prior to operating the engine to produce power, unless otherwise authorized in writing by the Director.”.

13. Condition 4.1.18 is repealed and replaced with the following:

“4.1.18 The approval holder shall perform stack surveys on the bio-filtration system as follows:

- (a) as per Table 4.1-A; and
- (b) according to the following frequency:
  - i. one month after start-up when, the facility has reached at least 80 percent of its capacity;
  - ii. five years thereafter from the start of facility operations; and
  - iii. one month following any of the corrective actions specified in 4.1.20 (c) to (e);

unless otherwise authorized in writing by the Director.”.

14. Condition 4.1.26(f) is repealed and replaced with the following:

“(f) remove the feedstock from the process that is causing the offensive odour(s);”.

15. Condition 4.1.26(g) is repealed and replaced with the following:

“(g) reduce the amount of each feedstock fed into the process to reduce volatile organic compounds and other offensive compounds or gases to levels that the bio-filtration system can successfully remove to meet an acceptable community standard; and”.

16. Condition 4.2.4 is repealed and replaced with the following:

“4.2.4 The approval holder shall only release the contents from the Industrial Runoff and Stormwater Retention Pond System as follows:

- (a) into the process building;
- (b) to a registered composting facility;

- (c) to a wastewater treatment facility that is subject of the appropriate Approval or Registration under the Act;
- (d) by land application in accordance with the *Guidelines for Municipal Wastewater Irrigation*, Alberta Environment, April 2000, as amended; or
- (e) as authorized in writing by the Director.”.

17. Condition 4.2.6 is repealed and replaced with the following:

“4.2.6 All trucks and tanker trucks

- (a) hauling feedstock into the facility; or
- (b) hauling post treated organic sludge from the facility;

shall have their:

- (i) undercarriage; and
- (ii) tires;

thoroughly washed, if necessary, before leaving the unloading area of the process building so that feedstock are not tracked:

- (A) outside the unloading building; and
- (B) off the facility.”.

18. Condition 4.3.2 is repealed and replaced with the following:

“4.3.2 The wastes referred to in this section of the approval do not refer to the feedstock listed in 3.1.4(a).”

19. Condition 4.4.3 is repealed and replaced with the following:

“4.4.3 The approval holder shall not release or permit the release of:

- (a) undigested sludge; or
- (b) sludge from the SRM processes;

by application to cultivated land, unless otherwise authorized in writing by the Director.”

20. Condition 4.4.4 is repealed and replaced with the following:

“4.4.4 The approval holder shall not compost any of the following outside the process building:

- (a) undigested sludge; or
- (b) sludge from the SRM processes;

unless authorized in writing by the Director.”.

21. The following is added after condition 4.4.4:

“4.4.4.1 The approval holder shall not release or permit the release of any off-spec materials from the process building, unless authorized in writing by the Director.”.

22. Condition 4.4.7 is repealed and replaced with the following:

“4.4.7 Notwithstanding 2.3.1, the approval holder shall assess any lands owned or leased by the Approval Holder or its affiliates that are proposed to receive the nutrient soil amendment as follows:

- (a) electrical conductivity shall be determined on a saturation extract;
- (b) sodium adsorption ratio shall be determined on a saturation extract;
- (c) plant available nitrogen shall be determined as the sum of KCl extractable ammonium nitrogen and KCl extractable nitrate nitrogen;
- (d) soil-test phosphorus shall be determined using the modified Kelowna method as documented in one of the following journals, unless otherwise authorized in writing by the Director:
  - (i) “Modified Kelowna” test for available phosphorus and potassium in soil, Ashworth, J. and Mrazek, K., 1995, *Commun. Soil Sci. Plant Anal.* 26: 731-739; or
  - (ii) Simultaneous extraction of available P and K with a new soil test: A modification of Kelowna extraction, Qian, P., Schoenau, J.J. and Karamanos, R.E., 1994, *Commun. Soil Sci. Plan Anal.* 25: 627-635;
- (e) total metals shall be determined on a strong acid digest; and
- (f) pH shall be determined on a saturation extract;  
unless otherwise authorized in writing by the Director.”.

23. Condition 4.4.8(f) is repealed and replaced with the following:

- “4.4.8(f) for plant available nitrogen:
- (i) a soil sample shall be collected from each of the 0-15, 15-30, 30-60 and 60-150 cm soil depth intervals for soil in which alfalfa is being grown at each sampling location; and
  - (ii) a soil sample shall be collected from each of the 0-15, 15-30 and 30-60 cm soil depth intervals for soil in which crops other than alfalfa are being grown at each sampling location;”.

24. Condition 4.4.9 is repealed and replaced with the following:

“4.4.9 In addition to 4.4.8, with respect to any soil samples required to be taken pursuant to 4.4.7, the approval holder shall collect the soil samples in accordance with the following frequency:

- (a) before the first application of the nutrient soil amendment to cultivated land during the first year; and
- (b) before the first application of the nutrient soil amendment to cultivated lands the following year; and
- (c) every third year after the soil sampling in 4.4.9 (a);  
unless otherwise authorized in writing by the Director.”.

25. Condition 4.4.14 is repealed and replaced with the following:

“4.4.14 In addition to the requirements in 4.4.12 and 4.4.13, the approval holder shall not spread or permit the spreading of nutrient soil amendment by application to lands owned or leased by the approval holder or its affiliates, if:

- (a) the receiving soil of the land exceeds any of the limits for the parameters, crops, and soil depth intervals specified in TABLE 4.4-A; and
- (b) the pH in the receiving soil falls outside the range limit for the crops and soil depth intervals specified in TABLE 4.4-A.”.

26. Condition 4.4.15(d) is repealed and replaced with the following:

“4.4.15(d) the pH in the soil after the nutrient soil amendment is applied falls outside the range limit for the crops and soil depth intervals specified in TABLE 4.4-A, at any time.”.

27. Condition 4.4.17(a) is repealed and replaced with the following:

“4.4.17(a) the legal land description of each field, owned or leased by the approval holder or its affiliates where nutrient soil amendment was applied;”.

28. Condition 4.3.8 is repealed.

29. The following is added before [sic] condition 4.1.15:

“4.1.1[sic] The approval holder shall treat or process only the feedstock described in the application, unless otherwise authorized in writing by the Director.”.

The Board has interpreted this recommendation from Director to mean:

The following is added after condition 4.1.15:

“4.1.15.1 The approval holder shall treat or process only the feedstock describe in the application, unless otherwise authorized in writing by the Director.”.

30. **TABLE 4.4-A: RECEIVING SOIL LIMITS** is repealed and replaced with the following:

**TABLE 4.4-A: RECEIVING SOIL LIMITS**

PARAMETER	SOIL DEPTH INTERVAL	LIMIT (Maximum unless stated otherwise)
<b>Soil in which alfalfa is being grown</b>		
Electrical conductivity	0-15 cm 15-30 cm 30-60 cm	1.0 dS/m above baseline level in any soil depth interval
Sodium adsorption ratio	0-15 cm 15-30 cm 30-60 cm	3.0 above baseline level in any soil depth interval
Plant available nitrogen	0-150 cm	335 kg/ha
Soil-test phosphorus	0-15 cm	200 mg/kg
Total metals	0-15 cm	Corresponding metal concentrations for agricultural lands set out in the <i>Alberta Tier 1 Soil and Groundwater Remediation Guidelines</i> , Alberta Environment, June 2007, as amended
pH	0-15 cm	Equal to or greater than 6.5 and equal to or less than 8.5
<b>Soil in which crops other than alfalfa are being grown</b>		
Electrical conductivity	0-15 cm 15-30 cm 30-60 cm	1.0 dS/m above baseline level in any soil depth interval
Sodium adsorption ratio	0-15 cm 15-30 cm 30-60 cm	3.0 above baseline level in any soil depth interval
Plant available nitrogen	0-60 cm	150 kg/ha
Soil-test phosphorus	0-15 cm	200 mg/kg
Total metals	0-15 cm	Corresponding metal concentrations for agricultural lands set out in the <i>Alberta Tier 1 Soil and Groundwater Remediation Guidelines</i> , Alberta Environment, June 2007, as amended
pH	0-15 cm	Equal to or greater than 6.5 and equal to or less than 8.5



ALBERTA  
ENVIRONMENT

Office of the Minister  
MLA, Medicine Hat

## Ministerial Order 12/2011

*Environmental Protection and Enhancement Act*  
R.S.A. 2000, c. E-12

### Order Respecting Environmental Appeals Board Appeal Nos. 09-006-009, 016 and 019

I, Rob Renner, Minister of Environment, pursuant to section 100 of the *Environmental Protection and Enhancement Act*, make the order in the attached Appendix, being an Order Respecting Environmental Appeals Board Appeal Nos. 09-006-009, 016 and 019.

Dated at the City of Edmonton, in the Province of Alberta, this 21 day of March, 2011.

Rob Renner  
Minister

Alberta

## Appendix

### Order Respecting Environmental Appeals Board Appeal Nos. 09-006-009, 016 and 019

With respect to the decision of the Director, Southern Region, Environmental Management, Alberta Environment, to issue Approval No. 241939-00-00 (the "Approval") under the Environmental Protection and Enhancement Act, R.S.A. 2000, c. E-12, to EcoAg Initiatives Inc. (the "approval holder"), I, Rob Renner, Minister of Environment, order that the Approval is varied as follows:

1. Repeal condition 1.1.2(k) and replace it with the following:  

"1.1.2(k) "degasser vessel" means the vessels, as described in the application, that helps the biogas be pushed or pressed out of the biomass at a faster rate with sparging of the effluent;"
2. Repealing the phrase "digested sludge" means the residue," in condition 1.1.2(l) and replacing it with the phrase ""digested sludge" means the residue,".
3. Repeal condition 1.1.2(q).
4. Repeal condition 1.1.2(t) and replace it with the following:  

"1.1.2(t) "feedstock" means livestock manure, treated or semi-treated municipal bio-solids, organic food resources, animal by-products, and agricultural wastes, and includes glycerine, as described in the application;"
5. Add the following after condition 1.1.2(t):  

"1.1.2(t.1) "Fertilizers Act" means the federal *Fertilizers Act*, R.S.C. 1985, c. F-10;"
6. Repeal condition 1.1.2(y) and replace it with the following:  

"1.1.2(y) "industrial runoff" means precipitation that falls on or traverses the facility developed area;"
7. Repeal condition 1.1.2(aa) and replace it with the following:  

"1.1.2(aa) "industrial wastewater" means the composite of liquid wastes and water-carried wastes, any portion of which results from any industrial process carried on at the facility;"

8. Add the following after condition 1.1.2(ff):
- “1.1.2(ff.1) “nutrient soil amendment” means the solid material produced at the facility that meets the requirements of the Fertilizers Act for a fertilizer or supplement;
- 1.1.2(ff.2) “off-spec materials” means any solid material produced by the facility that was intended to meet, but does not meet the requirements of the Fertilizers Act for a fertilizer or supplement;”.
9. Repeal the phrase “and the Water Environment Federation, as amended.” in condition 2.3.1(iii)(B) and replace it with the phrase “and the Water Environment Federation, as amended; and”.
10. Add the following after condition 2.3.1(iii)(B):
- “2.3.1(iv) for soil:
- (A) *Soil Sampling and Methods of Analysis*, Lewis Publishers, 1993, as amended;
- (B) the *Test Methods for Evaluating Solid Waste, Physical/Chemicals Methods*, USEPA, SW-846, September 1986, as amended;
- (C) the *Soil Quality Criteria Relative to Disturbance and Reclamation*, Alberta Agriculture, March 1987, as amended;
- (D) the *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites – Volume I: Main Report*, CCME EPC-NCS62E, 1993, as amended; and
- (E) the *Guidance Manual on Sampling, Analysis and Data Management for Contaminated Sites – Volume II: Analytical Method Summaries*, CCME EPC-NCS66E, 1993, as amended.”.
11. Adding the following immediately after condition 2.3.3:

**SECTION 2.4: NOTICE**

- 2.4.1 In addition to any other notice required by the Act, the approval holder shall provide the landowners and occupants within a three kilometre radius direct written notice of any applications for amendments, extensions, or renewals of this approval that are made to the Director and such notice shall be provided within seven days of the application being made to the Director.

## **SECTION 2.5: APPROVED PROCESSES**

- 2.5.1 The approval holder shall only use the mesophilic and thermophilic processes described in the application for the treatment of feedstock that comes into the facility.
- 2.5.2 If the approval holder intends to use any other type of process for the treatment of feedstock that comes into the facility, the approval holder shall:
- (a) make an application for an amendment of the approval to the Director;
  - (b) in addition to such other notice that is required by the Act, provide direct written notice to all landowners and occupants within a three kilometre radius of the facility that an application for an amendment of the approval has been made to the Director and such notice shall be provided within seven days of the application being made to the Director; and
  - (c) not make any changes to the processes used for the treatment of the feedstock at the facility until the approval holder has obtained an amendment to the approval to allow for such changes.

## **SECTION 2.6: EMERGENCY RESPONSE PLAN**

- 2.6.1 The approval holder shall develop, implement, and maintain an Emergency Response Plan.
- 2.6.2 The approval holder shall provide the Emergency Response Plan to the Director for approval on or before July 1, 2011, and once approved by the Director the approval holder shall implement the Emergency Response Plan as authorized in writing by the Director.
- 2.6.3 On or before March 31 of each year, the approval holder shall update the Emergency Response Plan to the satisfaction of the Director.
- 2.6.4 The Emergency Response Plan shall, at a minimum, provide for:
- (a) the notification of all landowners and occupants within a three kilometre radius of the facility that an emergency has occurred;
  - (b) the provision of instructions to all landowners and occupants within a three kilometre as to what actions they need to take to protect themselves and their property from any impacts that may result from the emergency;
  - (c) contact information as to whom the landowners and occupants can contact for additional information; and
  - (d) any additional information required by the Director in writing.

- 2.6.5 The approval holder shall not commence operation of the facility until it obtains written confirmation from the Director that the Emergency Response Plan has been approved.”
12. Repeal condition 3.1.2 and replace it with the following:
- “3.1.2 The approval holder shall notify the Director in writing at least 14 days before commencing operation of the facility to allow the Director to, among other things, conduct a compliance audit.”
13. Repeal condition 3.1.3 and replace it with the following:
- “3.1.3 The approval holder shall notify the Director in writing at least 14 days before commencing operations of the reciprocating co-generation unit portion of the facility.”
14. Repeal condition 3.2.8 and replace with the following:
- “3.2.8 The approval holder shall construct an air handling system in the receiving and unloading building as described in the application to operate the building under sufficient negative pressure to prevent any odours from within the building escaping outdoors.”
15. Repeal condition 3.3.1 and replace it with the following:
- “3.3.1 The approval holder shall construct an industrial runoff and storm water retention pond system by November 30, 2009 that includes, at a minimum, all of the following:
- (a) a control system for areas of potential spills or leaks on the facility developed area, including any loading docks or waste storage areas;
  - (b) dykes or other containments for the control system in (a), so that the surrounding watershed and groundwater are protected from contamination;
  - (c) an industrial runoff and storm water retention pond that includes at minimum, all of the following:
    - (i) a storage capacity capable of holding the volume of water resulting from a 1-in-100 year, 24 hour storm event for the area; and
    - (ii) a compacted clay liner system for the pond that includes all of the following:
      - (A) a minimum thickness of 1.00 metre;
      - (B) is constructed in lifts no more than 150 mm thickness;
      - (C) a 98% Standard Proctor Density at 2-3% optimum moisture content; and

- (D) a hydraulic conductivity of  $1 \times 10^{-7}$  cm/sec or less;  
and
  - (d) infrastructure that allows the approval holder to pump the contents of the pond into the process building to be used as process water.”.
- 16. Add the following after condition 4.1.6:
  - “4.1.6.1 The approval holder shall demonstrate to the satisfaction of the Director that air effluent emissions from any reciprocating engine greater than 600 kilowatts at full load, used for co-generation at the facility will emit less than 6 grams of nitrogen oxide (NO<sub>x</sub>) per kilowatt per hour, prior to operating the engine to produce power, unless otherwise authorized in writing by the Director.”.
- 17. Add the following after condition 4.1.15:
  - “4.1.15.1 The approval holder shall treat or process only the feedstock described in the application, unless otherwise authorized in writing by the Director:”.
- 18. Repeal condition 4.1.18 and replace it with the following:
  - “4.1.18 The approval holder shall perform stack surveys on the bio-filtration system as follows:
    - (a) as per Table 4.1-A; and
    - (b) according to the following frequency:
      - (i) one month after start-up, when the facility has reached at least 80 percent of its capacity;
      - (ii) five years after the start of facility operations; and
      - (iii) one month after undertaking any of the corrective actions specified in 4.1.20 (c) to (e);unless otherwise authorized in writing by the Director.”.
- 19. Repeal condition 4.1.26(f) and replace it with the following:
  - “4.1.26(f) remove the feedstock from the process that is causing the offensive odour(s);”.
- 20. Repeal condition 4.1.26(g) and replace it with the following:
  - “4.1.26(g) reduce the amount of each feedstock fed into the process to reduce volatile organic compounds and other offensive compounds or gases to levels that the bio-filtration system can successfully remove to meet an acceptable community standard; and”.

21. Add the following immediately after condition 4.1.26:
- “4.1.26.1 The approval holder shall undertake and complete the actions specified in section 4.1.26 within two weeks of identifying the source of the odours, or within such other period specified in writing by the Director.”.
22. Repeal condition 4.2.4 and replace it with the following:
- “4.2.4 The approval holder shall only release the contents from the Industrial Runoff and Stormwater Retention Pond System as follows:
- (a) into the process building;
  - (b) to a registered composting facility;
  - (c) to a wastewater treatment facility that is subject of the appropriate Approval or Registration under the Act;
  - (d) by land application in accordance with the *Guidelines for Municipal Wastewater Irrigation*, Alberta Environment, April 2000, as amended; or
  - (e) as authorized in writing by the Director.”.

23. Repeal condition 4.2.6 and replace it with the following:

“4.2.6 All trucks and tanker trucks

    - (a) hauling feedstock into the facility; or
    - (b) hauling post treated organic sludge from the facility;

shall have their:

    - (i) undercarriage; and
    - (ii) tires;

thoroughly washed before leaving the unloading area of the process building so that feedstock is not tracked:

    - (A) outside the unloading building; or
    - (B) off the facility.”.

24. Repeal condition 4.3.2 and replace it with the following:

“4.3.2 The waste referred to in this section of the approval does not refer to the feedstock listed in 3.1.4 (a).”.

25. Repeal condition 4.3.8.

26. Repeal condition 4.4.3 and replace it with the following:

“4.4.3 The approval holder shall not release or permit the release of:  
(a) undigested sludge; or  
(b) sludge from the SRM processes;  
by application to cultivated land, unless otherwise authorized in writing by the Director.”.

27. Repeal condition 4.4.4 and replace it with the following:

“4.4.4 The approval holder shall not compost any of the following outside the process building:  
(a) undigested sludge; or  
(b) sludge from the SRM processes;  
unless authorized in writing by the Director.”.

28. Add the following after condition 4.4.4:

“4.4.4.1 The approval holder shall not release or permit the release of any off-spec materials from the process building, unless authorized in writing by the Director.”.

29. Repeal condition 4.4.7 and replace it with the following:

“4.4.7 Notwithstanding 2.3.1, the approval holder shall assess any lands owned or leased by the approval holder or its affiliates that are proposed to receive the nutrient soil amendment as follows:  
(a) electrical conductivity shall be determined on a saturation extract;  
(b) sodium adsorption ratio shall be determined on a saturation extract;  
(c) plant available nitrogen shall be determined as the sum of KCl extractable ammonium nitrogen and KCl extractable nitrate nitrogen;  
(d) soil-test phosphorus shall be determined using the modified Kelowna method as documented in one of the following journals, unless otherwise authorized in writing by the Director:  
(i) “Modified Kelowna” test for available phosphorus and potassium in soil, Ashworth, J. and Mrazek, K., 1995, Commun. Soil Sci. Plant Anal. 26: 731-739; or  
(ii) Simultaneous extraction of available P and K with a new soil test: A modification of Kelowna extraction, Qian, P., Schoenau, J.J. and Karamanos, R.E., 1994, Commun. Soil Sci. Plan Anal. 25: 627-635;  
(e) total metals shall be determined on a strong acid digest; and  
(f) pH shall be determined on a saturation extract;  
unless otherwise authorized in writing by the Director.”.

30. Repeal condition 4.4.8(f) and replace it with the following:

- “4.4.8(f) for plant available nitrogen:
- (i) a soil sample shall be collected from each of the 0-15, 15-30, 30-60, and 60-150 cm soil depth intervals for soil in which alfalfa is being grown at each sampling location; and
  - (ii) a soil sample shall be collected from each of the 0-15, 15-30, and 30-60 cm soil depth intervals for soil in which crops other than alfalfa are being grown at each sampling location;”.

31. Repeal condition 4.4.9 and replace it with the following:

- “4.4.9 In addition to 4.4.8, with respect to any soil samples required to be taken pursuant to 4.4.7, the approval holder shall collect the soil samples in accordance with the following frequency:
- (a) before the first application of the nutrient soil amendment to cultivated land during the first year; and
  - (b) before the first application of the nutrient soil amendment to cultivated lands the following year; and
  - (c) every third year after the soil sampling in 4.4.9(a); unless otherwise authorized in writing by the Director.”.

32. Repeal condition 4.4.14 and replace it with the following:

- “4.4.14 In addition to the requirements in 4.4.12 and 4.4.13, the approval holder shall not spread or permit the spreading of nutrient soil amendment by application to lands owned or leased by the approval holder or its affiliates, if:
- (a) the receiving soil of the land exceeds any of the limits for the parameters, crops, and soil depth intervals specified in TABLE 4.4-A; and
  - (b) the pH in the receiving soil falls outside the range limit for the crops and soil depth intervals specified in TABLE 4.4-A.”.

33. Repeal condition 4.4.15(d) and replace it with the following:

- “4.4.15(d) the pH in the soil after the nutrient soil amendment is applied falls outside the range limit for the crops and soil depth intervals specified in TABLE 4.4-A, at any time.”.

34. Repeal **TABLE 4.4-A: RECEIVING SOIL LIMITS** and replace it with the following:

**TABLE 4.4-A: RECEIVING SOIL LIMITS**

PARAMETER	SOIL DEPTH INTERVAL	LIMIT (Maximum unless stated otherwise)
<b>Soil in which alfalfa is being grown</b>		
Electrical conductivity	0-15 cm 15-30 cm 30-60 cm	1.0 dS/m above baseline level in any soil depth interval
Sodium adsorption ratio	0-15 cm 15-30 cm 30-60 cm	3.0 above baseline level in any soil depth interval
Plant available nitrogen	0-150 cm	335 kg/ha
Soil-test phosphorus	0-15 cm	200 mg/kg
Total metals	0-15 cm	Corresponding metal concentrations for agricultural lands set out in the <i>Alberta Tier 1 Soil and Groundwater Remediation Guidelines</i> , Alberta Environment, June 2007, as amended
pH	0-15 cm	Equal to or greater than 6.5 and equal to or less than 8.5
<b>Soil in which crops other than alfalfa are being grown</b>		
Electrical conductivity	0-15 cm 15-30 cm 30-60 cm	1.0 dS/m above baseline level in any soil depth interval
Sodium adsorption ratio	0-15 cm 15-30 cm 30-60 cm	3.0 above baseline level in any soil depth interval
Plant available nitrogen	0-60 cm	150 kg/ha
Soil-test phosphorus	0-15 cm	200 mg/kg
Total metals	0-15 cm	Corresponding metal concentrations for agricultural lands set out in the <i>Alberta Tier 1 Soil and Groundwater Remediation Guidelines</i> , Alberta Environment, June 2007, as amended
pH	0-15 cm	Equal to or greater than 6.5 and equal to or less than 8.5

35. Repeal condition 4.4.17(a) and replace it with the following:

“4.4.17(a) the legal land description of each field, owned or leased by the approval holder or its affiliates where nutrient soil amendment was applied;”.

36. Add the following immediately after condition 4.7.4:

“4.7.4.1 The approval holder shall not commence operation of the facility until it obtains written confirmation from the Director that the Groundwater Monitoring Program has been approved.

4.7.4.2 The approval holder shall not commence operation of the facility until it has implemented the Groundwater Monitoring Program as authorized by the Director.”.