

Decision Summary BA22005

This document summarizes my reasons for issuing Approval BA22005 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document BA22005. All decision documents and the full application are available on the Natural Resources Conservation Board (NRCB) website at www.nrcb.ca under Confined Feeding Operations (CFO)/CFO Search. My decision is based on the act and its regulations, the policies of the NRCB, the information contained in the application, and all other materials in the application file.

Under AOPA this type of application requires an approval. For additional information on NRCB permits please refer to www.nrcb.ca.

1. Background

On October 4, 2022, Hazel Bluff Dairy Ltd. submitted a Part 1 application to the NRCB to expand an existing dairy CFO.

Prior to receipt of this Part 1 application, NRCB Compliance staff issued Enforcement Order EO-22-04 (October 4, 2022) to Hazel Bluff Dairy to address unauthorized construction and expansion that was identified. The operator to date has been working with the NRCB in accordance with this enforcement order.

NRCB compliance staff identified several facilities that have been constructed without obtaining an NRCB permit as well as increasing livestock numbers without obtaining an NRCB permit from 200 to 400 milking cows (plus associated dries and replacements) and removing the permitted feeder pig numbers. Enforcement Order EO-22-04 requires Hazel Bluff Dairy to apply and obtain permits for these facilities as well the expansion in livestock numbers.

The Part 2 application was submitted on February 4, 2023. On April 4, 2023, I deemed the application complete.

The proposed expansion involves:

- Increasing livestock numbers from 200 milking cows (plus associated dries and replacements) to 600 milking cows (plus associated dries and replacements)
- Remove permitted 575 feeder pigs numbers
- Permit the unauthorized constructed facilities:
 - West heifer shed – 12 m x 61 m
 - West pen attached to heifer shed – 52 m x 77 m
 - North dairy barn – 32 m x 128 m
 - Addition to south dairy barn – 40 m x 61 m
- Construct a new earthen liquid manure storage (EMS) to replace/expand (in the same location) the existing EMS – 92 m x 53 m x 6.9 m (deep)
- The applicant also requested a variance under section 17 of AOPA of the prohibition against manure storage facilities and manure collection areas less than 100 metres away from water wells. That variance request is discussed in Appendix E and section 8, below.

a. Location

The existing CFO is located at E½ 27-59-1 W5M in Westlock County, roughly 10 km SW of the town of Westlock. The terrain is gently rolling sloping to the west with the nearest common body of water being a dugout approximately 460 m to the east.

b. Existing permits

As the CFO existed on January 1, 2002, the CFO is grandfathered with a deemed approval under section 18.1 of AOPA. That deemed permit includes municipal permits 84-890, 94-104-WES, and 98-074. These deemed permits allowed for the construction and operation of a dairy CFO with 200 milking cows (plus associated dries and replacements) and 575 feeder pigs. Since these permits the CFO received NRCB-issued Authorization BA05003, which allowed the construction of a milking parlour, gathering area, calf housing, and associated areas. The determination of the CFO's deemed permit status and capacity under section 18.1 of AOPA was completed in previously issued Authorization BA05003.

2. Notices to affected parties

Under section 19 of AOPA, the NRCB notifies (or directs the applicant to notify) all parties that are "affected" by an approval application. Section 5 of AOPA's Part 2 Matters Regulation defines "affected parties" as:

- In the case where part of a CFO is located, or is to be located, within 100 m of a bank of a river, stream or canal, a person or municipality entitled to divert water from that body within 10 miles downstream
- the municipality where the CFO is located or is to be located
- any other municipality whose boundary is within a specified distance from the CFO, depending on the size of the CFO
- all persons who own or reside on land within a specified distance from the CFO, depending on the size of the CFO

For the size of this CFO the specified distance is 1.5 miles. (The NRCB refers to this distance as the "affected party radius.")

A copy of the application was sent to Westlock County, which is the municipality where the CFO is located.

The NRCB gave notice of the application by public advertisement in the Westlock News on April 4, 2023. The full application was made available for viewing during regular business hours, and was posted on the NRCB website for public viewing. As a courtesy, 54 letters were sent to people identified by Westlock County as owning or residing on land within the affected party radius.

3. Notice to other persons or organizations

Under section 19 of AOPA, the NRCB may also notify persons and organizations the approval officer considers appropriate. This includes sending applications to referral agencies which have a potential regulatory interest under their respective legislation.

Referral letters and a copy of the complete application were emailed to Alberta Health Services (AHS), Alberta Environment and Protected Areas (EPA), and Alberta Agriculture and Irrigation (AGI).

AHS responded to the application with questions regarding odour and nuisances, surface water. They also recommended water wells be tested. As explained below the application meets all AOPA technical requirements of which are designed to limit odour and nuisances as well provided some protection to surface water. Additionally, a condition already exists requiring Hazel Bluff Dairy to annually test the water wells onsite; this condition will be carried forward in this permit.

4. Municipal Development Plan (MDP) consistency

I have determined that the proposed expansion is consistent with the land use provisions of the Westlock County's municipal development plan. (See Appendix A for a more detailed discussion of the county's planning requirements.)

5. AOPA requirements

With respect to the technical requirements set out in the regulations, the proposed expansion:

- Meets the required AOPA setbacks from nearby residences, with one exception (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS). The owner of that residence has signed a written waiver of the MDS requirement to their residence
- Meets the required AOPA setbacks from springs and common bodies of water
- Has sufficient means to control surface runoff of manure
- Meets AOPA's nutrient management requirements regarding the land application of manure
- Meets AOPA groundwater protection requirements for the design of floors and liners/protective layers of manure storage facilities and manure collection areas

With the terms and conditions summarized in part 11 and Appendix F, the application meets all relevant AOPA requirements. The exemptions and variances that address the AOPA requirements around water wells are discussed in the following parts of this decision summary.

6. Responses from municipality and other directly affected parties

Directly affected parties are entitled to a reasonable opportunity to provide evidence and written submissions relevant to the application, and are entitled to request an NRCB Board review of the approval officer's decision. Not all affected parties are "directly affected" under AOPA.

Municipalities that are affected parties are identified by the act as "directly affected." Westlock County is an affected party (and directly affected) because the proposed expansion is located within its boundaries.

Ms. Kathleen Deshoux, a development officer with Westlock County, provided a written response on behalf of the County. Ms. Deshoux stated that the application is consistent with the County's land use provisions of the municipal development plan. The application's consistency with the Westlock County's municipal development plan is addressed in Appendix A, attached.

The NRCB considers a person who owns a residence within the MDS of the CFO, and who waives the MDS requirements in writing to be automatically considered a directly affected (See NRCB Operational Policy 2016-7: Approvals, part 6.2). Cheryl Tilma provided an MDS waiver and is a directly affected party.

The two other individuals who submitted a response own or reside on land within the 1.5 mile notification radius for affected persons. Because of their location within this radius, and because they submitted a response, they qualify for directly affected party status. (See NRCB Operational Policy 2016-7: Approvals, part 6.2; and Appendix B)

These two directly affected parties raised concerns regarding odours, manure spreading, and groundwater contamination. These concerns are addressed in Appendix C.

7. Environmental risk of CFO facilities

As part of my review of this application, I assessed the risk to the environment posed by the CFO's existing manure storage facilities and manure collection areas. I used the NRCB's environmental risk screening tool (ERST) to assist in my assessment of risk to surface water and groundwater (see NRCB Operational Policy 2016-7: Approvals, part 8.13). The tool provides for a numeric scoring of risks, which can fall within a low, moderate, or high risk range. (A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at www.nrcb.ca.)

For the sake of efficiency, I first assessed the CFO's existing highest risk facilities using the ERST. The EMS, dairy barn, and dairy barn addition appear to be the CFO's highest risk facilities, because of their location in proximity to water wells and the type of manure stored (liquid). The assessment found that these facilities pose a low potential risk to groundwater and surface water. Because these are the CFO's highest risk facilities, I presume that the CFO's other existing facilities also pose a low potential risk to both groundwater and surface water. From a review of other information gathered in the course of this application, I am satisfied that the screening provided by the ERST is adequate and that the presumption is not rebutted. A further assessment of the risks posed by these other facilities, using the ERST, is not necessary.

I also assessed the proposed facilities, using the NRCB's risk screening tool, and determined they pose a low potential risk to groundwater and surface water.

8. Variances

The applicant applied for a variance of the requirement for a water well to be at least 100 m away from a manure storage facility and manure collection area. I determined that the existing north dairy barn, addition to the south dairy barn, and new heifer pen and shed, were constructed / expanded without a permit, and are located within the required AOPA setback from a water well. As explained in Appendix E, I am prepared to issue a variance to the 100 metre water well setback due to construction features of the facilities, the well information and the ongoing well testing requirements. A water well monitoring condition is already required from the previous NRCB permit and will be carried forward (see Appendix E, below).

9. Exemptions

I determined that the proposed EMS is located within the required AOPA setback from a water well. As explained in Appendix D, an exemption to the 100 metre water well setback is warranted due to the facility's design and the well's construction upslope. A water well monitoring condition is already required from the previous NRCB permit and will be carried forward (see Appendix D, below).

10. Other factors

Because the approval application is consistent with the MDP land use provisions, and meets the requirements of AOPA and its regulations, I also considered other factors.

AOPA requires me to consider matters that would normally be considered if a development permit were being issued. The NRCB interprets this to include aspects such as property line and road setbacks related to the site of the CFO. (Grow North, RFR 2011-01 at page 2). Approval officers are limited to what matters they can consider though as their regulatory authority is limited.

Ms. Deshoux also listed the setbacks required by the county's land use bylaw (LUB) and noted that some are clearly met, but it is not clear if the southern facilities (EMS and calf barn) meet the property line setbacks between the NE and SE quarters. However, ultimately, I've concluded that the existing EMS and calf barn already appeared to be very close if not already not meeting the southern property line prior to the any NRCB permits. Furthermore, the new EMS will fully cross the property line from the NE quarter section to the SE quarter section. Since the applicant owns both quarter sections, Westlock County concluded that they had no concerns about property line setbacks.

I also considered the effects the proposed CFO may have on natural resources administered by provincial departments. A copy of the application was provided to EPA.

I am unaware of any active *Water Act* applications or EPEA applications regarding the location. If additional water licensing is needed an application is required by EPA. I am also unaware of any statements of concern submitted under section 73 of the *Environmental Protection and Enhancement Act* or under section 109 of the *Water Act* in respect of the subject of this application.

I am not aware of any written decision of the Environmental Appeals Board for this location (<http://www.eab.gov.ab.ca/status.htm>, accessed June 8, 2023).

Finally, I considered the effects of the proposed expansion on the environment, the economy, and the community, and the appropriate use of land.

Consistent with NRCB policy (Approvals Policy 8.7.3), I presumed that the effects on the environment are acceptable because the application meets all of AOPA's technical requirements. In my view, this presumption is not rebutted and the directly affected parties' concerns regarding air and groundwater quality have been addressed.

Consistent with NRCB policy (Approvals Policy 8.7.3), if the application is consistent with the MDP then the proposed development is presumed to have an acceptable effect on the economy and community. In my view, this presumption is not rebutted and the directly affected parties' concerns have been addressed.

I also presumed that the proposed expansion is an appropriate use of land because the application is consistent with the land use provisions of the municipal development plan (See NRCB Operational Policy 2016-7: Approvals, part 8.7.3.; and Appendix A). In my view, this presumption is not rebutted.

11. Terms and conditions

Approval BA22005 specifies the cumulative permitted livestock capacity as:

- 600 milking cows (plus associated dries and replacements)

Approval BA22005 also permits the use of the following unauthorized construction:

- West heifer shed – 12 m x 61 m
- West pen attached to heifer shed – 52 m x 77 m
- North dairy barn – 32 m x 128 m
- Addition to south dairy barn – 40 m x 61 m

Approval BA22005 also permits the construction of:

- a new earthen liquid manure storage (EMS) to replace (in the same location) the existing EMS – 92 m x 53 m x 6.9 m (deep)

Approval BA22005 contains terms that the NRCB generally includes in all AOPA approvals, including terms stating that the applicant must follow AOPA requirements and must adhere to the project descriptions in their application and accompanying materials.

In addition to the terms described above, Approval BA22005 includes conditions that generally address construction deadlines, construction inspection. For an explanation of the reasons for these conditions, see Appendix F.

For clarity, and pursuant to NRCB policy, I consolidated the following permits with Approval BA22005: 84-890, 94-104-WES, 98-074, and Authorization BA05003 (see NRCB Operational Policy 2016-7: Approvals, part 10.5). Permit consolidation helps the permit holder, municipality, neighbours and other parties keep track of a CFO's requirements, by providing a single document that lists all the operating and construction requirements. Consolidating permits generally involves carrying forward all relevant terms and conditions in the existing permits into the new permit, with any necessary changes or deletions of those terms and conditions. This consolidation is carried out under section 23 of AOPA, which enables approval officers to amend AOPA permits on their own motion. Appendix F discusses which conditions from the historical permits are or are not carried forward into the new approval.

12. Conclusion

Approval BA22005 is issued for the reasons provided above, in the attached appendices, and in Technical Document BA22005.

Hazel Bluff Dairy's deemed permits, including municipal development permit 84-890, 94-104-WES, 98-074, and NRCB-issued Authorization BA05003 are therefore superseded, and their content consolidated into this Approval BA22005, unless Approval BA22005 is held invalid following a review and decision by the NRCB's board members or by a court, in which case the old permits will remain in effect.

June 22, 2023

(Original signed)

Nathan Shirley
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Determining directly affected party status
- C. Concerns raised by directly affected parties
- D. Exemptions from water well setbacks
- E. Variances
- F. Explanation of conditions in Approval BA22005

APPENDIX A: Consistency with the municipal development plan

Under section 20 of AOPA, an approval officer may only approve an application for an approval or amendment of an approval if the approval officer holds the opinion that the application is consistent with the “land use provisions” of the applicable municipal development plan (MDP).

This does not mean consistency with the entire MDP. In general, “land use provisions” cover MDP policies that provide generic directions about the acceptability of various land uses in specific areas.

Conversely, “land use provisions” do not call for discretionary judgements relating to the acceptability of a given confined feeding operation (CFO) development. Similarly, section 20(1.1) of the act precludes approval officers from considering MDP provisions “respecting tests or conditions related to the construction of or the site” of a CFO or manure storage facility, or regarding the land application of manure. (These types of MDP provisions are commonly referred to as MDP “tests or conditions.”) “Land use provisions” also do not impose procedural requirements on the NRCB. (See NRCB Operational Policy 2016-7: Approvals, part 8.2.5.)

Hazel Bluff Dairy’s CFO is located in Westlock County and is therefore subject to that county’s MDP. Westlock County adopted the latest amendments revision to this plan in January 2023, under Bylaw #05-2016.

Section 4.1 of the MDP relates to the agricultural area policies.

Policy 4.1.1.3 clarifies that the “primary use” of this area is for both “extensive and intensive agricultural uses and confined feeding operations”. This is considered a general guiding principle and is not considered a land use provision, therefore this is not relevant to my decision. In any respect, this application is consistent with this provision.

Policy 4.1.2.2 states in part that the county will provide “input” to the NRCB on applications for new or expanded CFOs, based on the “technical and locational merits” of each application. This policy is likely not a land use provision because it requires site-specific, discretionary determinations (see Operational Policy 2016-7, Approvals, part 8.2.5). Therefore, this policy is not relevant to the MDP consistency determination required by section 22(1) of AOPA.

Policy 4.1.2.2 states further that CFOs and manure storage facilities “must fully satisfy all the requirements and regulations adopted under that Act, specifically the minimum distance separation requirements and the land base requirements.” Policy 4.1.2.3 states “Minimum distance separations for CFOs shall conform to standards set out in the Agricultural Operations Practices Act.” Together, the use of the term “minimum distance separation” in policies 4.1.2.2 and 4.1.2.3 appear to be a reference to the minimum distance separation (MDS) requirement in section 3 of the Standards and Administration Regulation under AOPA. These MDP policies are likely not relevant to my MDP consistency determination, because these policies are based on AOPA’s MDS requirements. (See also Operational Policy, Approvals, part 8.2.5). That said, the CFO meets the MDS requirements under AOPA and meets all other AOPA technical requirements.

Policy 4.1.2.4 specifies CFOs requiring an approval, registration, or authorization maintain a 2.4 km setback from “corporate boundaries of any urban municipality within Westlock County” or a 0.8 km CFO setback from “Community Areas designated on Map 7.2.” Hazel Bluff Dairy is not within any of these setbacks and therefore meets this policy’s setback requirement.

Policy 4.1.2.5 states that CFOs are “discouraged from locating in environmentally sensitive areas where slope instability and or groundwater contamination may be of concern.” This policy is likely not a land use provision because it requires site-specific, discretionary determinations (see Operational Policy 2016-7, Approvals, part 8.2.5). Therefore, this policy is not relevant to the MDP consistency determination required by section 20(1) of AOPA. At any rate, the application meets the “technical and locational” requirements of AOPA.

Policy 4.1.2.6 states that in addition to AOPA, Area Structure Plans (ASP) in Westlock County and MDP policies in respect to CFOs should be followed. The development officer confirmed that there are no ASPs or IDPs in place at this time that are applicable to this location.

For these reasons, I conclude that the application is consistent with the land use provisions of Westlock County’s MDP.

APPENDIX B: Determining directly affected party status

The following individual qualifies for directly affected party status because they own a residence within the minimum distance separation (MDS) and waived the MDS requirement in writing:

- Cheryl Tilma
Pt. NW 26-59-01 W5M

See NRCB Operational Policy 2016:7 – Approvals, part 6.2

The following individuals qualify for directly affected party status because they submitted responses to the application and they own or reside on land within the “affected party radius,” as specified in section 5(c) of the Agricultural Operation, Part 2 Matters Regulation:

- Bill and Caren Gawryluk
NW 13-59-1 W5M

APPENDIX C: Concerns raised by directly affected party

The directly affected party (the Gawryluks) raised the following concerns:

Odours and air quality – concern was raised over the negative effects of odours and the negative impacts on air quality and quality of life.

Approval officer's conclusion:

AOPA's minimum distance separation (MDS) is a means for mitigating odour and other nuisance impacts from CFOs. Hazel Bluff Dairy meets the required MDS to neighbouring residences with one exception. The owner of that residence provided a signed waiver, waiving the MDS requirement to their residence.

The subject land is currently zoned by the county as agriculture, indicating that it is an acceptable location for agricultural activities.

Manure application – concern was raised over the access to enough manure spreading lands and potential negative effects of spreading.

Approval officer's conclusion:

Manure application is addressed in sections 24 of the Standards and Administration Regulation. Section 24(1) requires manure to be incorporated within 48 hours of application when it is applied to cultivated land, or by surface application on forages, or on no-till cropland (this requires increased setbacks from residences). Incorporating reduces odours by working the manure into the soil. Manure application is typically of short duration once or twice per year and associated nuisance impacts typically do not persist for extended periods of time.

Complaints about CFO related issues can be reported to the NRCB's 24 hours reporting line (1-866-383-6722) and will be followed up on by an NRCB inspector.

AOPA has requirements to protect the soil, groundwater, and surface water from excessive application of manure nutrients. These include soil testing requirements, soil salinity limits, nitrate-nitrogen limits, and setbacks from water bodies, water wells, and residences. Operators are required to keep manure spreading and soils sampling records and must provide them to the NRCB upon request.

The applicant has provided adequate acres of grey wooded spreading lands. This meets the AOPA requirement for land base.

Groundwater quality – concern regarding groundwater contamination from manure storage facilities at the CFO.

Approval officer's conclusion:

As set out in this decision summary and in Technical Document BA22005, the proposed CFO facilities meet all AOPA technical requirements. Several of these requirements are designed to prevent or minimize manure leakage from CFO facilities and thus to prevent manure from reaching and contaminating groundwater. As noted above, because the proposed CFO facilities meet or exceed the AOPA requirements, I concluded that the proposed and unauthorized facilities pose a low potential risk to groundwater.

Groundwater usage and licensing – concern over the volume of water required to operate the dairy.

Approval officer's conclusion:

Alberta Environment and Protected Areas (EPA) is responsible for licensing the use of groundwater and surface water in the province. The water licensing process includes an opportunity for neighbours to provide input. Therefore, for efficiency and to avoid inconsistent regulation, NRCB approval officers generally do not consider water supply concerns when receiving AOPA permit applications, other than ensuring that applicants sign one of the water licensing declarations listed in the Part 2 application form.

Hazel Bluff Dairy chose the declaration indicating that it is uncertain if it requires additional water licensing. However, by signing the declaration it acknowledges that its receipt of an AOPA approval will not improve or influence its ability to obtain a water licence, and that any construction it conducts under an AOPA approval is at its own risk if EPA denies a water licence application. The applicant is reminded that it is their responsibility to secure adequate water licensing.

APPENDIX D: Exemptions from well setbacks

1. Water Well Considerations

The proposed EMS is to be located less than 100 m from water wells. (I have confirmed that 2 water wells are located approximately 78 m and 82 m from the proposed EMS during a site visit and google earth. This is in conflict with the section 7(1)(b) of the *Standards and Administration Regulation (SAR)* under AOPA.

Section 7(2), however, allows for exemptions if, before construction, the applicant can demonstrate that the aquifer into which the water well is drilled is not likely to be contaminated by the manure storage facility (MSF), and, if required, a groundwater monitoring program is implemented.

The potential risks of direct aquifer contamination from the MSF are presumed to be low if the applicant's proposed MSF meets AOPA's technical requirements to control runoff and leakage. Approval officers also assess whether the water well itself could act as a conduit for aquifer contamination.

In this case, I felt the following factors were relevant to determine the risk of aquifer contamination via the water well:

- a. How the well was constructed
- b. Whether the well is being properly maintained
- c. The distance between the well and the proposed MSF
- d. Whether the well is up- or down-gradient from the MSF and whether this gradient is a reasonable indication of the direction of surface and groundwater flow between the two structures

These presumptions and considerations are based on NRCB Operational Policy 2016-7: Approvals, part 8.7.1.

The water well ID 418255:

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 82 m E of the proposed EMS is likely EPA water well ID #418255. This well is reported to have been installed in 1995 and has a perforated or screened zone from 80.77 m to 86.87 m and 92.96 m to 123.44 m below ground level across stratigraphy. The well has an above-grade casing with the bottom of the casing at 13.41 m. All the wells are tied into a main water tank for use. The well's log identifies protective layer or layers from ground surface to 10.67 m below ground level. The well has a driven seal from ground surface to 13.41 m below ground level (across the clay layers). The well appeared to be in good condition at the time of my site inspection and its casing was protected. The well is up-gradient of the CFO and MSF.

The water well ID 498119:

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 78 m N of the proposed EMS is likely EPA water well ID #498119. This well is reported to have been installed in 2001 and has a perforated or screened zone from 103.63 m to 140.21 m below ground level across stratigraphy. The well is a below-grade sealed

casing with the bottom of the casing at 24.38 m. All the wells are tied into a main water tank for use. The well's log identifies protective layers from ground surface to 18.59 m below ground level. The well has a driven seal from ground surface to 103.63 m below ground level (across clay, shale, and sandstone layers). The well appeared to be in good condition at the time of my site inspection and its casing was protected. The well is adjacent to the north dairy barn.

The NRCB has developed a "water well exemption screening tool," based on the factors listed above, to help approval officers assess the groundwater risks associated with a nearby water well.¹

In this case, the results of the water well exemption screening tool suggest that exemptions are likely as seen in Technical Document BA22005.

A water well testing condition is already required for the CFO and the condition will be carried forward.

¹ A complete description of this tool is available under CFO/Groundwater and Surface Water Protection on the NRCB website at www.nrcb.ca.

APPENDIX E: Variances

The north dairy barn, addition to south dairy barn, and west heifer shed and pen are all located less than 100 m from water wells. I have confirmed that 3 water wells are located between 13 m and 89 m from the various facilities during a site visit and in satellite imagery review. This is in conflict with the section 7(1)(b) of the Standards and Administration Regulation (SAR).

Approval officers must not grant variances or exemptions lightly or in the absence of substantive evidence they will produce equivalent levels of protection (see Decision 03-04, *AAA Cattle Ltd.* p 24). I will consider whether a variance is warranted to the water wells for the facilities separately below.

The CFO operator requested a variance to the water well setback requirement on the grounds that the wells are properly completed and protected.

In this case, the four facilities have already been constructed (without a permit) and, in my opinion, may cause a risk to the environment. I therefore need to either deny the application or alternatively consider if a variance is warranted under AOPA's section 17(1). It is my opinion that considering a variance is appropriate in this case.

In this case, I have used the same tools that I would normally use to determine if an exemption is warranted. I consider the water well exemption framework (see, for example, Appendix D above) as useful for assessing the degree of protection for the water well in relation to a manure collection area (MCA). In this case I presume that the risks of direct aquifer contamination from the MCAs are low if the MCAs otherwise meet AOPA's technical requirements to control runoff and leakage. However, when determining whether an MCA that otherwise meets AOPA's technical requirements provides the same or greater protection and safety as provided for by the regulations, I also assess whether water wells themselves could act as conduits for aquifer contamination.

Because we use the water well exemption screening tool to determine if a water well is going to be impacted when an exemption is considered. The water well exemption screening tool indicates that there is a low potential for groundwater to be impacted by the MCA. It is my opinion that in this case, the water well provides an equivalent level of protection if an exemption was considered.

Based on the above information it is my assessment that varying the 100 m setback rule for the facilities would offer the same degree of protection and safety as that provided for by the regulations for the following reasons:

1. Location of the facilities
2. The construction and landscaping of the wells
3. The facilities' construction features and designs and water well depths and seals
4. The depth of the water wells and protective layers that exist

One mechanism that may provide the same or greater protection and safety is if the approval officer implements a groundwater monitoring program of the water wells in question. The applicant already has a water well testing requirement, and it will be carried forward into Approval BA22005. Due to the above factors I find a variance is warranted for the facilities.

APPENDIX F: Explanation of conditions in Approval BA22005

Approval BA22005 includes several conditions, discussed below, and carries forward a condition from BA05003 (see section 2 of this appendix). Construction conditions from historical permits that have been met are identified in the appendix to Approval BA22005.

1. New construction conditions in Approval BA22005

a. Groundwater protection requirements

Hazel Bluff proposes to construct the new earthen liquid manure storage (EMS) with a 2.6 metre thick naturally occurring protective layer. Section 9 of AOPA's Standards and Administration Regulation specifies a maximum hydraulic conductivity for this type of protective layer in order to minimize leakage.

Hazel Bluff measured the hydraulic conductivity of the protective layer by installing a monitoring well (or water table well) at the time of borehole drilling. This approach provides an adequate representation of the protective layers proposed to be used to protect the groundwater resource.

The regulations provide that the actual hydraulic conductivity of a 10 metre thick naturally occurring protective layer must not be more than 1×10^{-6} cm/sec.

In this case, the in situ measurement was 2.6×10^{-7} cm/sec. This value is below the maximum value in the regulations. Therefore, the proposed naturally occurring protective layer meets the hydraulic conductivity requirement in the regulations.

b. Construction Deadline

Hazel Bluff did not propose a construction deadline of the proposed new EMS but indicated they would like to complete as soon as possible. I have included a deadline of November 15, 2023 as a condition in Approval BA22005. As the applicant requires this facilities' additional manure storage due to the unauthorized expansions that have occurred the condition will also require the applicant to contact NRCB compliance staff to provide a manure management plan if the deadline cannot be achieved.

c. Post-construction inspection and review

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed according to their required design specifications. To be effective, and to reduce risk to the operator, these inspections must occur before livestock or manure are placed in the newly constructed facilities. Approval BA22005 includes a condition stating that Hazel Bluff shall not place manure in the manure storage or collection portions of the new EMS until NRCB personnel have inspected the facility and confirmed in writing that it meets the approval requirements.

2. Operating condition carried forward from BA05003

7. Water Well Testing Reporting i) Drinking water quality tests including bacteriological and chemical factors must be conducted annually on the three water wells located within 100 metres of the facilities with the results submitted annually to the NRCB by October 31.

Pursuant to section 23 of AOPA (approval officer amendments), I have determined that condition 7 from Authorization BA05003 will be carried forward and revised to reflect current

NRCB terminology including adding flexibility to the condition and creating a water well monitoring statement for clarity.