

Decision Summary BA21013

This document summarizes my reasons for issuing Approval BA21013 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document BA21013. 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 May 6, 2021, Northland Dairy Ltd. (Northland) submitted a Part 1 application to the NRCB to expand an existing dairy CFO.

The Part 2 application was submitted on May 18, 2021. On June 8, 2021, I deemed the application complete.

The proposed expansion involves:

- Increasing livestock numbers from 265 to 350 milking cows (plus associated dries and replacements)
- Constructing a new dairy barn – 107 m x 31 m
- Constructing a manure storage room with a pit - 17 m x 15 m
- Constructing a new earthen liquid manure storage – 92 m x 60 m 5 m
- Relocating a maternity barn – 17 m x 30 m
- Permitting a previously constructed addition to the heifer barn – 15 m x 33 m

The application also notified the NRCB of the proposed construction of a rotary parlour milking facility (80 m x 24 m) and two breezeways between facilities (12 m x 6 m each). These facilities are an “ancillary structure,” under section 1(1)(a.1) of the Agricultural Operations, Part 2 Matters Regulation, because it will not be used to store or collect manure or to confine livestock. Therefore, under section 4.1 of that regulation, this structure does not need to be permitted under the act.

a. Location

The existing CFO is located on the SE 23-63-24 W4M (the proposed EMS is to be constructed on the NW 13-63-24 W4M) in the Athabasca County, roughly 8 km from Perryvale, AB. The terrain is relatively flat sloping to the West on the NW quarter and to the south on the SE quarter. The nearest body of water is a seasonal creek 403 m east of the existing site.

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. This deemed approval allows for the construction and operation of

a 265 milking cow (plus associated dries and replacements) CFO. The determination of the CFO's deemed permit status under section 18.1 of AOPA is explained in Appendix D attached. The deemed facilities are listed in the appendix to the Approval BA21013.

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 mile. (The NRCB refers to this distance as the "affected party radius.")

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

The NRCB gave notice of the application by public advertisement in the Athabasca Advocate paper on June 8, 2021. The full application was posted on the NRCB website for public viewing. As a courtesy, 32 letters were sent to people identified by the 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 Parks (AEP), and Alberta Agriculture and Forestry (AF).

4. Alberta Land Stewardship Act (ALSA) regional plan

Section 20(10) of AOPA requires that an approval officer must ensure the application complies with any applicable ALSA regional plan. There is no ALSA regional plan for the area where the proposed CFO is to be located.

5. Municipal Development Plan (MDP) consistency

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

6. AOPA requirements

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

- Meets the required AOPA setbacks from all nearby residences with the use of an expansion factor (AOPA setbacks are known as the “minimum distance separation” requirements, or MDS)
- 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, the application meets all relevant AOPA requirements. The exemptions that are required to address the AOPA requirements around water wells are discussed in the following parts of this decision summary.

7. Responses from the municipality and other referral agencies

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.” Athabasca County is an affected party (and directly affected) because the proposed expansion is located within its boundaries.

Ms. Tara LeMessurier, a development officer with Athabasca County, provided a written response on behalf of the county. As noted in section 2, the county is a directly affected party.

Ms. LeMessurier stated that the application is consistent with the Athabasca County’s municipal development plan. The application’s consistency with the municipal development plan, is addressed in Appendix A, attached.

Jeff Presley, an inspector, replied on behalf of AF. Mr. Presley stated they had no concerns with the application and requested that Northland Dairy communicate with AF prior to and during construction of the proposed dairy barn. Northland Dairy has been made aware of this request.

8. Environmental risk of CFO facilities

New MSF/MCA which clearly meet or exceed AOPA requirements are automatically assumed to pose a low risk to surface and groundwater. However, there may be circumstances where, because of the proximity of a shallow aquifer, or porous subsurface materials, an approval officer may require groundwater, surface water, soil, construction supervision or an exemption from monitoring for the facility. In this case a determination was made and monitoring is not required.

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 dairy barn, existing EMS, and existing heifer barn (with addition) using the ERST. These appear to be the CFO's highest risk facilities, due to their location in proximity to water wells and depth below grade of the facilities. 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.

9. Exemptions

I determined that the proposed dairy barn and relocated maternity barn relocation are located within the required AOPA setback from two water wells. As explained in Appendix B, an exemption to the 100 metre water well setback is warranted due to each wells position, construction, and location upslope from the proposed dairy barn and relocated maternity barn.

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.

Athabasca County did not list the setbacks required by the County's land use bylaw (LUB) but my review of the LUB with the site map provided, it appears that these setbacks are met.

I have considered the effects the proposed CFO may have on natural resources administered by provincial departments. No response was received from AEP in regard to the application, furthermore the application meets AOPAs technical requirements.

Finally, I considered the effects of the proposed CFO 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 in the environment are acceptable because the application meets all of AOPA's technical requirements. In my view, this presumption is not rebutted.

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.

I also presumed that the proposed CFO is an appropriate use of land because the application is consistent with the land use provisions of the municipal development plan (Approvals Policy 8.7.3.). In my view, this presumption is not rebutted because Athabasca County's response states that the application is consistent with their MDP.

11. Terms and conditions

Approval BA21013 specifies the cumulative permitted livestock capacity as 350 milking cows (plus associated dries and replacements), and permits the construction of the following facilities:

- Constructing a new dairy barn – 107 m x 31 m
- Constructing a manure storage room with a pit – 17 m x 15 m
- Constructing a new earthen liquid manure storage – 92 m x 60 m 5 m
- Relocating a maternity barn – 17 m x 30 m
- Permitting an addition to the heifer barn – 15 m x 33 m

Approval BA21013 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 BA21013 includes conditions that generally address construction deadlines, document submission, and construction inspections. For an explanation of the reasons for these conditions, see Appendix C.

12. Conclusion

Approval BA21013 is issued for the reasons provided above, in the attached appendices, and in Technical Document BA21013.

Northland's deemed approval, is therefore superseded, and is consolidated into this Approval BA21013, unless Approval BA21013 is held invalid following a review and decision by the NRCB's board members or by a court, in which case the deemed approval will remain in effect.

July 30, 2021

(Original signed)

Nathan Shirley
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Exemptions from water well setbacks
- C. Explanation of conditions in Approval BA21013
- D. Determination of deemed permit status

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.)

Northland Dairy’s CFO is located in Athabasca County and is therefore subject to that county’s MDP. Athabasca County adopted the latest revision to this plan on August 29, 2019, under Bylaw #003-2019.

Policy 5.3 defines agricultural land use for extensive 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.

Policies 5.14 to 5.18 of the MDP relate specifically to CFOs.

Policy 5.14 supports the development and expansion of CFOs where there is limited potential effects for land use conflicts. As the application meets minimum distance separation (MDS) requirements, as well as the other AOPA requirements, I consider this met.

Policy 5.15 requires MDS to be met. As stated in the decision summary and elsewhere the AOPA MDS has been met.

Policy 5.16 lists 4 requirements in which the county believes new or expanding CFOs are inappropriate:

- a) Within 1.6 km of land used for residential, commercial, recreational or institutional use or land designated for such uses;
- b) Within 100m of a water body, watercourse or ravine;
- c) Within 1.6 km of an urban municipality, and intermunicipal development plan boundary, a summer village or a hamlet; or
- d) Within the Major Lake Policy Area Overlay Area or the Less Developed Lake Policy Area Overlay or within the Environmentally Significant Area or the Key Wildlife and Biodiversity Zone.

5.16 a) zoning of the land around the CFO is zoned as agricultural and therefore this policy is considered met.

5.16 b) The County shows waterbodies/water courses on several maps, and specifically on map A3. According to the maps no waterbodies or water courses are within 100m of the proposed

expansion and therefore this requirement is considered met. The application also meets the AOPA requirement of 30 m from a common body of water.

5.16 c) the proposed expansion meets this requirement.

5.16 d) According to Maps A3 and Map 1 the proposed expansion is not within any of these areas and therefore this policy is considered met.

Policy 5.17 states what the County will consider when providing recommendations to the NRCB regarding a proposed application. I consider this to be guidance for the County when responding to the NRCB and therefore not an actual valid land use provision.

Policy 5.18 requests the NRCB require the applicant to enter in to road use agreements. Under NRCB policy, approval officers will not include conditions in permits requiring operators to enter into a road use agreement with the municipality. The reason for this policy is that roads are a “municipal responsibility and are not located on the CFO site.” NRCB Operational Policy 2016-7: *Approvals*, part 8.9. However, Northland Dairy is reminded that it is responsible under municipal law for complying with any county road use requirements.

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

APPENDIX B: Exemptions from natural water and well setbacks

1. Water Well Considerations

The proposed new dairy barn and relocated maternity barn are to be located less than 100 m from a water well or water wells. I have confirmed that 2 water wells are located approximately 46 m and 15 m respectively from them during a site visit and through google earth. This is in conflict with the section 7(1)(b) of the *Standards and Administration Regulation* (SAR). Section 7(2) 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)/manure collection area (MCA), or if required by an approval officer a groundwater monitoring program is implemented.

Under the regulation, one basis for granting an exemption is if the approval officer implements a groundwater monitoring program of the water well(s) in question.

One basis for granting an exemption is if the “aquifer into which the well is drilled is not likely to be contaminated” by the proposed MSF or MCA.

Section 7(2) of the SAR states that the 100 m setback to a water well does not apply if the facility (MSF/MCA) is not likely to contaminate the aquifer into which the water well is drilled and if required by an approval officer, a groundwater monitoring program is implemented.

The potential risks of direct aquifer contamination from the MSF/MCA are presumed to be low if the applicant’s proposed MSF/MCA 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/MCA
- d. Whether the well is up- or down-gradient from the MSF/MCA 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 wells:

Based on information provided by the applicant and from the Alberta Environment and Parks (AEP) water well database, the water well located approximately 46 m SW of the new dairy barn is likely AEP water well ID #247079. This well is reported to have been installed in 1982 and has a perforated or screened zone from 55.47 m to 58.52 m below ground level across stratigraphy. The well is finished with an above ground casing. The well’s log identifies protective layer or layers from 25.6 m to 50.9 m below ground level. The well has a cement other seal from ground surface to 55.78 m below ground level (across the various 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.

Based on information provided by the applicant and from the Alberta Environment and Parks (AEP) water well database, the water well located approximately 12 m W of the relocated maternity barn is likely AEP water well ID #247083. This well is reported to have been installed in 1988 and has a perforated or screened zone from 50.29 m to 62.48 m below ground level across stratigraphy. The well is finished with an above ground casing. The well's log identifies protective layer or layers from 17.07 m to 24.38 m below ground level. The well has a bentonite seal from at surface. 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 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 an exemption is likely as seen in Technical Document BA21013.

Based on the above, I am prepared to grant an exemption to the 100 m water well setback requirement for the new dairy barn and the relocated maternity barn.

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 C: Explanation of conditions in Approval BA21013

Approval BA21013 includes several conditions, discussed below:

a. Construction above the water table

Section 9(2) of the *Standards and Administration Regulation* under the *Agricultural Operation Practices Act* (AOPA) requires the bottom of the liner of a manure storage facility or manure collection area to be not less than one metre above the water table of the site “at the time of construction.”

Based on information provided in the application, the proposed new dairy barn meets the one metre requirement of section 9(2). However, because the height of the water table can vary over time, a condition is included requiring Northland Dairy to cease construction and notify the NRCB immediately if the water table is encountered during construction.

b. Groundwater protection requirements

Northland Dairy has measured the hydraulic conductivity of the proposed protective layer by removing a relatively undisturbed soil sample during borehole drilling (using a Shelby tube) and testing the hydraulic conductivity of that sample in a lab.

Lab measurements of hydraulic conductivity are made in a precisely controlled setting and are typically based on a small soil sample. Therefore, the NRCB generally multiplies lab-measured hydraulic conductivity values by a factor of 10 to reflect the potential variability in actual protective layer materials and conditions that can reasonably be expected to be achieved in the field.

Example: Hydraulic conductivity = k
 Lab k = 1×10^{-9} cm/sec
 Expected field k = $10 \times (1 \times 10^{-9}$ cm/sec) = 1×10^{-8} cm/sec

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 lab measurement was 1.05×10^{-8} cm/sec. With the required ten-fold modification, the expected field value is 1.05×10^{-7} cm/sec. This expected value is below the maximum value in the regulations. Therefore, the proposed liner meets the hydraulic conductivity requirement in the regulations.

c. Construction Deadline

Northland Dairy proposes to complete construction of the proposed new dairy barn, EMS and relocated maternity barn by June, 2024. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of December 1, 2024 is included as a condition in Approval BA21013.

d. Post-construction inspection and review

The NRCB's general practice is to include conditions in new or amended permits to ensure that the new or expanded facilities are constructed according to the required design specifications. Accordingly, Approval BA21013 includes conditions requiring:

- a. the concrete used to construct the liner of the manure collection and storage portion of the new dairy barn to meet the specification for category B (liquid manure shallow pits) and category C (solid manure – wet) in Technical Guideline Agdex 096-93 “Non-Engineered Concrete Liners for Manure Collection and Storage Areas.”
- b. Northland dairy to provide documentation to confirm the specifications of the concrete used to construct the manure storage and collection portions of the facility.

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 BA21013 includes conditions stating that Northland Dairy shall not place livestock or manure in the manure storage or collection portions of the new facilities until NRCB personnel have inspected each and confirmed in writing that they meet the approval requirements.

APPENDIX D: Determination of deemed permit status

Northland Dairy claims that its CFO is grandfathered (that is, it has a “deemed” permit) under section 18.1 of AOPA. I am treating that as a request for a determination of deemed permit status. Under section 11(1) of the Administrative Procedures Regulation under AOPA, because I am cross-appointed as an NRCB inspector, I conducted an investigation into the deemed permit status of the CFO/MSF.

The investigation was to determine the capacity of the CFO that was in place on January 1, 2002.

The CFO is not covered by a municipal development permit (or permit issued under the *Public Health Act*) issued before AOPA came into effect on January 1, 2002. However, under section 18.1(1)(a) of AOPA, the CFO may still hold a deemed permit if:

- a. the CFO “existed” on January 1, 2002; and,
- b. the CFO facilities were at a size that was at or greater than the permit threshold sizes under AOPA. (See NRCB Operational Policy 2016-6: *Public Notice on Grandfathering Decisions*, part 1.)

To determine whether the CFO meets these two criteria, the NRCB must consider, among other things:

- a. What facilities existed at the site on January 1, 2002, including their dimensions, types of physical structures and other physical characteristics
- b. How each of those facilities was being used on January 1, 2002

The NRCB published notice of the deemed permit determination as part of the notice for the proposed Registration BA21002 application, in the Athabasca Advocate on June 8, 2021.

Under section 18.1(2)(a) of AOPA, if a CFO existed on January 1, 2002, the CFO’s deemed capacity is its physical capacity to confine livestock on January 1, 2002 (See NRCB Operational Policy 2016-5: *Determining Deemed Capacity for Grandfathered CFOs*).

For determining capacity, I consulted standards from Technical Guideline Agdex 096-81: Calculator for Determining Livestock Capacity of Operations as They Existed on January 1, 2002.

In discussion with the applicant, the existing dairy barn has 180 free stall, 53 tie stalls as well as 48 head pack barn area. Using a formula from the Agdex 096-81 for calculating dairy barn capacity, the claimed grandfathered capacity of 265 milking cows for the dairy barn is, reasonable. There are also several pens at the CFO indicating that the operation housed dries and replacements along with their milking cows.

Based on these findings, the CFO is considered to have a deemed approval and a deemed capacity of 265 milking cows (plus associated dries and replacements).

I did not receive any submissions relating to grandfathering.