

Decision Summary BA23005

This document summarizes my reasons for issuing Authorization BA23005 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document BA23005. 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 authorization. For additional information on NRCB permits please refer to www.nrcb.ca.

1. Background

On March 17, 2023, Darosa Farms Ltd. submitted a Part 1 application to the NRCB to construct a manure storage facility (MSF) and manure collection area (MCA) at an existing feedlot CFO.

The Part 2 application was submitted on April 27, 2023. On June 5, 2023, I deemed the application complete.

The proposed construction involves:

- Constructing new pens
 - East pen – 43 m x 45 m
 - South pen – 128 m x 75 m
 - West pen – 28 m x 45 m
- Extension to existing calf pens – new dimensions 18 m x 61 m
- Constructing a catch basin - 55 m x 65 m x 3 m
- Decommissioning existing catch basins

The proposed facilities are to accommodate already permitted livestock numbers.

a. Location

The proposed feedlot facilities are located at SW 30-48-23 W4M in Leduc County, roughly 14 km from the city of Leduc, AB. The terrain is undulating, slightly sloping to the southeast. The nearest body of water is a wetland 325 m to the north.

b. Existing permits

The CFO is already permitted under Approval BA16016 for 1,500 dairy replacement heifers (consisting of 500 calves, 500 growing heifers, and 500 bred heifers).

2. Notices to affected parties

Under section 21 of AOPA, the NRCB notifies all parties that are “affected” by an authorization application. Section 5 of AOPA’s Part 2 Matters Regulation defines “affected parties” as:

- the municipality where the CFO is located or is to be located
- 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 municipality entitled to divert water from that body within 10 miles downstream

- any other municipality whose boundary is within a notification distance. In this case, the notification distance is 0.5 miles from the CFO

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

3. Notice to other persons or organizations

Under NRCB policy, 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), and Alberta Environment and Protected Areas (EPA).

Ms. Anderson, an environmental health officer at AHS, sent a response raising questions regarding whether the NRCB is assessing the wells on site for potential contamination. The existing water wells are located 100 m from the proposed and existing facilities. As explained in section 7, risk screening of the entire site has been completed and all of the CFO's existing and proposed facilities score low risk to both groundwater and surface water. However, a water well testing condition exists for this location and is still in place.

No other responses were received.

4. Municipal Development Plan (MDP) consistency

I have determined that the proposed construction is consistent with the land use provisions of Leduc 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 construction:

- 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. Approvals policy section 6.2 presumes that a person who provides a written MDS waiver is automatically considered to be directly affected. However, in the case of an authorization section 21(2) of the Act specifies that the only directly affected parties are the applicant and the municipality.
- Meets the required AOPA setbacks from springs, and common bodies of water
- Has sufficient means to control surface runoff of manure
- Meets AOPA groundwater protection requirements for the design of floors and liners of manure storage facilities and manure collection areas

With the terms and conditions summarized in part 9, the application meets all relevant AOPA requirements. The exemptions that are required to address the AOPA requirements around water well setbacks are discussed in the following parts of this decision summary.

6. Responses from municipality

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." Leduc County is an affected party (and directly affected) because the proposed construction is located within its boundaries.

Mr. Ata Muhammad, a development officer with Leduc County, provided a written response on behalf of the County. Mr. Muhammad did not state if the application is consistent with Leduc County's land use provisions of its municipal development plan but did highlight several provisions for consideration. The application's consistency with the County's municipal development plan is addressed in Appendix A, attached.

7. Environmental risk of facilities

When reviewing a new authorization application for an existing CFO, NRCB approval officers assess the CFO's existing buildings, structures, and other facilities. In doing so, the approval officer considers information related to the site and the facilities, as well as results from the NRCB's environmental risk screening tool (ERST). The assessment of environmental risk focuses on surface water and groundwater. The ERST provides for a numeric scoring of risks, which can fall within either 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.) However, if those risks have previously been assessed, the approval officer will not conduct a new assessment unless site changes are identified that require a new assessment, or the assessment was supported with a previous version of the risk screening tool and requires updating. See NRCB Operational Policy 2016-7: Approvals, part 8.13.

In this case, the risks posed by Darosa Farms' existing CFO facilities were assessed in 2016 using the ERST. According to that assessment, the facilities posed a low potential risk to surface water and groundwater.

The circumstances have not changed since that assessment was done. As a result, a new assessment of the risks posed by the CFO's existing facilities is not required.

New CFO facilities 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 monitoring for the facility. The CFO already has a condition for water well sampling and this will continue.

8. Exemptions

I determined that the proposed new west pen and extended calf pens are located within the required AOPA setback from a water well. As explained in Appendix B, an exemption to the 100 metre water well setback is warranted due to the construction, location of the well and an existing water well sampling condition.

9. Terms and conditions

Authorization BA23005 permits the construction of the pens and catch basin.

Authorization BA23005 contains terms that the NRCB generally includes in all AOPA authorizations, 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, Authorization BA23005 includes conditions that generally address construction deadlines, document submission, construction inspection, and decommissioning. For an explanation of the reasons for these conditions, see Appendix C.

10. Conclusion

Authorization BA23005 is issued for the reasons provided above, in the attached appendices, and in Technical Document BA23005.

Authorization BA23005 must be read in conjunction with Darosa Farms' previously issued Approval BA16016 which remains in effect.

August 23, 2023

(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 Authorization BA23005

APPENDIX A: Consistency with the municipal development plan

Under section 22 of AOPA, an approval officer may only approve an application for an authorization or amendment of an authorization 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 22(2.1) 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.)

Darosa Farms’ CFO is located in Leduc County and is therefore subject to that county’s MDP. The county adopted the latest revision to this plan on June 23, 2019, under Bylaw #08-19.

Section 4.3.0.2 of the MDP lists planning objectives and policies for the county’s four agricultural areas. (The locations of these areas are shown on Map 4 of the MDP.) The existing CFO is in Area South Central/East. The MDP provisions applicable to Darosa Farms’ CFO are discussed below.

Section 4.3.0.2(c) states that the purpose of Agricultural Area South Central/East is “to provide for a broad range of agriculture including confined feeding operations. This area currently has a number of dairy operations that will be adversely impacted by significant increases in population and/or development.” This is likely a general guiding principle and is not considered a valid land use provision, therefore it’s not relevant to my decision.

Section 4.3.2 states that the county supports the development and expansion of CFOs provided the operation is compatible with the surrounding land uses. More specifically, section 4.3.2.1 states support for new or expanded CFOs provided the operation:

- a. does not create adverse impacts on environmentally significant lands;*
- b. has a satisfactory access;*
- c. is located within Agricultural Areas A, B or C,*
- d. is carried out in accordance with generally accepted farming practices regarding the storage, disposal and spreading of manure and the disposal of animal carcasses; and*
- e. meets the minimum setback distances to urban communities and residential development as regulated by the Agricultural Operation Practices Act.*

Section 4.3.2.1 (a) is likely not a land use provision because it requires site-specific, discretionary determinations (see NRCB Operational Policy 2016-7, *Approvals* 8.2.4). Therefore, this policy is not relevant to the MDP consistency determination required by section 22(1) of AOPA. At any rate, the application meets the “technical and locational” requirements of AOPA.

Section 4.3.2.1 (b) is considered outside the mandate of AOPA. Additionally, the county did not raise concern regarding this matter.

Section 4.3.2.1 (c) is met as the CFO is located in Agricultural area C.

Section 4.3.2.1 (d) This part is likely not considered a “land use provisions,” as it is likely a CFO-related “test” under section 22(2.1) of AOPA. At any rate, the applicant has provided adequate spreading lands for manure management in previous expansion application. The applicant must also adhere to all AOPA requirements.

Section 4.3.2.1 (e) the application meets the required minimum distance separation (as they have provided a waiver) as set out by AOPA.

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

APPENDIX B: Exemptions from water and well setbacks

1. Water Well Considerations

The proposed west pen and extended calf pens are to be located less than 100 m from water wells. I have confirmed that 3 water wells are located within 100m from the facilities during a site visit and through the use of satellite imagery. 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 feedlot pens, and, if required, 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 Protected Areas (EPA) water well database, the water well located approximately 53 m W of the west pen and 97 m W of the extended calf pens is likely EPA water well ID 271162. This well is reported to have been installed in 1980 and drilled to a depth of 30.48 m and the bottom of the well's casing is at 19.20 m below the surface. The type of seal is listed as unknown.

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 46 m N from the extended calf pens and adjacent to the west pen is likely EPA Well ID 271164. This well is reported to have been installed in 1982 and drilled to a depth of 30.48 m. The well is located inside a shed attached to the existing calf barn, upslope from all proposed facilities. According to the well report the casing was placed down to 18.59 m and the seal is unknown.

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 41 m S of the west pen and adjacent to the extended calf pens is likely EPA water well ID 291994. This well is reported to have been installed in 1999 and has a perforated or

screened zone from 24.38 m to 30.48 m below ground level across stratigraphy. The well is installed with an above ground casing. This well is used for non-domestic purposes. The well's log identifies protective layer or layers from ground surface to 16.46 m below ground level. The well has a driven and shale trap seal from 15.24 m to 18.29 m (across the shale layers). The well appeared to be in good condition at the time of my site inspection and its casing was protected.

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 BA23005.

Approval BA16016 has an active water well monitoring condition and this monitoring program will continue.

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 Authorization BA23005

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 this information, the proposed catch basin meets the one metre requirement of section 9(3) [for protective layer. However, because the height of the water table can vary over time, a condition is included requiring Darosa Farms to cease construction and notify the NRCB immediately if the water table is encountered during construction.

b. Groundwater protection requirements

Darosa Farms proposes to construct the new catch basin and feedlot pens with a 1 metre thick compacted soil liner for the catch basin and 0.5 metre thick compacted soil liner for pens. Section 9 of AOPA’s Standards and Administration Regulation specifies a maximum hydraulic conductivity for this type of liner in order to minimize leakage.

To demonstrate compliance with this standard, Darosa Farms provided lab measurements of the hydraulic conductivity of the materials that will be used to construct the compacted soil liner. 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 liner materials and conditions that can reasonably be expected to be achieved in the field.

The regulations provide that the actual hydraulic conductivity of a 0.5 metre thick compacted soil liner must not be more than 5×10^{-7} cm/sec.

In this case, the lab measurement was 1.5×10^{-8} cm/sec. With the required ten-fold modification, the expected field value is 1.5×10^{-7} cm/sec. This expected value is below (better than) the maximum value in the regulations. Therefore, the proposed liner meets the hydraulic conductivity requirement in the regulations.

To provide additional assurance that the as-built facilities adequately protect groundwater, Authorization BA23005 includes a condition requiring Darosa Farms to provide a construction completion report certifying that the liners were constructed with the same liner material as that used for hydraulic conductivity testing and that the facilities were constructed according to the proposed procedures and design specifications.

c. Construction Deadline

Darosa Farms proposes to complete construction of the proposed new pens and catch basin by December, 2023. This time-frame is considered to be unreasonable for the proposed scope of work. To allow for construction delays and unforeseen circumstances the deadline of December 1, 2025 is included as a condition in Authorization BA23005.

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, Authorization BA23005 includes conditions requiring:

- a. The permit holder shall provide a construction completion report, prepared by a qualified

third party that confirms that the compacted clay liner for the pens and catch basin is built as proposed.

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. Authorization BA23005 includes a condition stating that Darosa Farms shall not place livestock or manure in the manure storage or collection portions of the new pens and manure impacted runoff in the catch basin until NRCB personnel have inspected the facilities and confirmed in writing that they meet the authorization requirements.

e. Decommissioning

Darosa Farms has proposed to decommission the existing catch basins. Therefore, a condition will be included requiring this be completed prior to construction of the new catch basin. This decommissioning must be completed in accordance with Technical Guideline Agdex 096-90, "Closure of Manure Storage Facilities and Manure Collection Areas."