



Decision Summary BA24003

This document summarizes my reasons for issuing Approval BA24003 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document BA24003. 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 January 8, 2024, Crow Farms and Ranches Ltd. (Crow Farms) submitted a Part 1 application to the NRCB to construct a new beef CFO.

An extension to the 6 month deadline to file a part 2 was granted on July 2, 2024. The Part 2 application was submitted on July 18, 2024. On October 11, 2024, I deemed the application complete.

The location is currently a cow calf operation which is not required to be permitted under AOPA as it is not a confined feeding operation. The application is to permit the use of the existing cow calf pens as a beef feedlot pens and construct new pens and a catch basin for all facilities.

The proposed CFO involves:

- Permitting 3,500 beef finishers
- Constructing feedlot pens (row 2) – 375 m x 75 m
- Constructing catch basin – 54 m x 54 m x 7 m
- Permitting existing cow calf pens as feedlot pens (row 1) – 475 m x 75 m
- 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 D and section 9, below.

a. Location

The proposed CFO is located at NE 14-49-2 W5M in Leduc County, roughly 3.5 km NE of the hamlet of Sunnybrook AB. The terrain is relatively flat sloping to the north with the nearest common body of water being a seasonal creek approximately 470 m east of the proposed CFO.

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 “notification distance”.) The application is not located within 100 m of a bank of a river, stream, or canal.

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

The NRCB gave notice of the application by:

- posting it on the NRCB website,
- public advertisement in the Leduc Representative newspaper in circulation in the community affected by the application on October 11, 2024, and
- sending 53 notification letters to people identified by Leduc County as owning or residing on land within the notification distance.

The full application was made available for viewing during regular business hours.

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.

A referral letter and a copy of the complete application was emailed to Alberta Environment and Protected Areas (EPA).

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 CFO 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.)

6. AOPA requirements

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

- Meets the required AOPA setbacks from nearby residences, with three exceptions (AOPA setbacks are known as the “minimum distance separation” requirements, or MDS). The owners of these residences have signed written waivers of the MDS

- requirement to their residences
- 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/ of manure storage facilities and manure collection areas

With the terms and conditions summarized in part 11 and in Appendix E, the application meets all relevant AOPA requirements. The variances that are required to address the AOPA requirements around the setback to water wells are discussed in part 9 and Appendix D, below.

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

Mr. Benjamin Ansaldo, a planner with Leduc County, provided a written response on behalf of the County. Mr. Ansaldo stated that the application is consistent with the County's land use provisions of the municipal development plan. The application's consistency with the land use provisions of the 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 7.2.1). Marie and Ray Scobie, Brayden Preece, and Paul Tomaszewski provided MDS waivers and are directly affected parties.

Apart from municipalities, any member of the public may request to be considered "directly affected." The NRCB received responses from 4 individuals.

All of the people who submitted responses own or reside on land within the 1.5 mile notification distance for affected persons. Because of their location within this distance, and because they submitted a response, they qualify for directly affected party status. (See NRCB Operational Policy 2016-7: Approvals, part 7.2.1)

The directly affected parties raised concerns regarding odours and air quality, increased noise, manure application, groundwater and surface water contamination, groundwater licensing, property values, and increased traffic and road damage. These concerns are addressed in Appendix C.

8. Environmental risk of CFO facilities

New CFO facilities which clearly meet or exceed AOPA requirements are automatically assumed to pose a low potential 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 monitoring or an

exemption monitoring for a facility. Nevertheless, I assessed the risk for the proposed pens (row 2) and catch basin using the NRCB's environmental risk screening tool (see description below) which indicated a low potential risk to groundwater and surface water.

As part of my review of this application, I also assessed the risk posed by the existing cow calf pens (proposed feedlot pens row 1) due to their proximity to the existing water wells. 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 9.17). 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.)

The assessment found that the proposed feedlot pens row 1 pose a low potential risk to groundwater and surface water. Based on 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.

However, as explained in Section 9 and Appendix D due to the water well locations and information, I have included a water well monitoring condition for additional assurance.

9. 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/manure collection area. I determined that the existing pens (row 1), which were originally cow calf pens, are located within the required AOPA setback from 3 existing water wells. As explained in Appendix D, I am prepared to issue a variance to the 100 m water well setback due to the construction, location of facilities, and water well information. A water well monitoring condition will also be included in the permit (see Appendix E, 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.

Mr. Ansaldo noted that the application meets the required setbacks in the Leduc County's land use bylaw.

I have considered the effects the proposed expansion may have on natural resources administered by provincial departments. EPA has not made me aware of 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. Furthermore, the application meets AOPA's technical requirements.

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 January 25, 2025).

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 Operational Policy 2016-7: Approvals, part 9.10.9, 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 have been addressed. See Appendix C for further discussion on air quality and surface water.

Consistent with NRCB Operational Policy 2016-7: Approvals, part 9.10.9, if the application is consistent with the land use planning provisions of the MDP then the proposed development is presumed to have an acceptable effect on the economy and community. In my view, in light of the discussion of groundwater use, traffic, and property values in Appendix C, this presumption is not rebutted.

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 MDP (see NRCB Operational Policy 2016-7: Approvals, part 9.10.9) with the land zoned Agriculture. In my view, this presumption is not rebutted.

11. Terms and conditions

Approval BA24003 specifies the cumulative permitted livestock capacity as 3,500 beef finishers and permits the construction of the new pens (row 2) and catch basin and permits the use of the former cow calf pens as feedlot pens (row 1).

Approval BA24003 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 BA24003 includes conditions that generally address construction deadlines, document submission, construction inspections, and water well monitoring. For an explanation of the reasons for these conditions, see Appendix E.

12. Conclusion

Approval BA24003 is issued for the reasons provided above, in the attached appendices, and in Technical Document BA24003.

February 3, 2025

(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. Variances
- E. Explanation of conditions in Approval BA24003

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.

“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 9.2.7.)

Crow Farms’ proposed 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 August 27, 2024, under Bylaw #03-24.

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 Agricultural Area West (A). The MDP provisions applicable to Crow Farms’ proposed CFO are discussed below.

Section 4.3.2 states that the county supports the development of new or expanded 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 or B,*
- 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). At any rate, the application meets the technical and locational requirements of AOPA and is not located on the “environmentally significant lands” show on Map 6 of the MDP.

Section 4.3.2.1 (b) is considered outside the mandate of AOPA. Additionally, the county did not raise concern regarding this matter. The applicant is reminded that they must comply with applicable transportation requirements.

Section 4.3.2.1 (c) is met as the proposed CFO and the application is located in Agricultural Area A.

Section 4.3.2.1 (d) This part is likely not considered a “land use provision,” as it is likely a “test” under section 20(1.1) of AOPA related to the application of manure. At any rate, the applicant has provided proof that they have access to adequate spreading lands for manure management. The applicant must also adhere to all AOPA requirements including nutrient management on lands to which manure is applied.

Section 4.3.2.1 (e) the application meets the required minimum distance separation (with the exception of 3 residences who have signed waivers) 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.

APPENDIX B: Determining directly affected party status

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

- Marie and Ray Scobie
- Brayden Preece
- Paul Tomaszewski

See NRCB Operational Policy 2016-7: Approvals, part 7.2.1.

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

- Bonnie Bentley
- Jacqueline Johnson
- Marvin Stilet

See NRCB Operational Policy 2016-7: Approvals, part 7.2.1.

The following individuals also submitted a written response (statements of support) to the application qualify for directly affected party status because they submitted a response 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:

- Carlton and Stacey Brewster

APPENDIX C: Concerns raised by directly affected parties

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. Crow Farms and Ranches Ltd. meets the required MDS to neighbouring residences with three exceptions. The owners of those residences provided signed waivers, 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 negative effects and timing of manure spreading.

Approval officer's conclusion:

Manure application is addressed in section, 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 increase 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 (see section 25 of the Standards and Administration Regulation). 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.

Surface water and impacts on environment – concern was raised regarding the potential for contamination of surface water from manure runoff from the CFO facilities.

Approval officer's conclusion:

As noted in the decision summary above, and further documented in Technical Document BA24003, the CFO meets all AOPA technical requirements. Several of these requirements are designed to protect ground and surface water, and thus to prevent CFO manure from reaching and contaminating surface water. The applicant is proposing to construct a catch basin to capture impacted runoff and must control run-on water for all CFO facilities this includes proper drainage and berms where necessary. Because the proposed CFO facilities meet these technical requirements, I presume that they will not pose a material risk to surface water.

As noted above, a recent environmental risk screening has suggested that the CFO's proposed facilities pose a low risk to surface water.

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

Approval officer’s conclusion:

In the decision summary and in Technical Document BA24003, 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 facilities pose a low potential risk to groundwater. Additionally, as discussed in Appendix D, due to the proximity of the existing pens (row 1) to water wells a condition requiring the applicant to test water wells will be included.

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

Approval officer’s conclusion:

Alberta Environment and Parks (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.

Crow Farms and Ranches Ltd. 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.

Increased traffic including traffic noise, dust, and road wear and tear – concern was raised about traffic in the area and the associated effects.

Approval officer’s conclusion:

The county has jurisdiction of local roads. The NRCB does not require applicants to enter into road use agreements with counties or municipalities. However, the county may require that agreement, on its own. It is encouraged that neighbours attempt to communicate to try to improve working relationships.

Property values – concern was raised that the proposed CFO would reduce property values.

Approval officer’s conclusion:

In several review decisions, the NRCB’s board members have consistently stated that concerns regarding effects on land or property values are “not a subject for [the board’s] review under AOPA” or for approval officers’ consideration of permit applications. According to the board, impacts on property values are a land use issue which is a “planning matter dealt with by municipalities in municipal development plans and land use bylaws.” (see, e.g. Brad Towle, RR 2017-09 pg. 3.) As stated above the application is consistent with the land use provisions of Leduc County’s MDP.

APPENDIX D: Variances

The existing row of pens (row 1) is located less than 100 m from three water wells. I confirmed this during a site visit and through google earth. This is in conflict with the section 7(1)(b) of the SAR.

The row of existing pens was previously constructed and used for cow calf facilities. A permit was not required for this use; however, a permit is now required to use the pens for a feedlot. Since the pens are already constructed, an exemption under AOPA section 7(2) of the Standards and Admin Regulation (SAR) is not an option. A variance under 17(1) of AOPA is an alternative path.

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

1. Water Well Considerations

On January 9, 2024 the CFO operator requested a variance to the water well setback requirement on the grounds that the wells were properly constructed, and the existing pens will not have an inherit risk on the wells.

In this case, the facility has already been constructed (without a permit) and has previously been operating as a cow calf operation. 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.

I have used the same tools that I would normally use to determine if an exemption under section 7(2) of the SAR is warranted. I consider the water well exemption framework 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 MCA are low if the MCA meets (or otherwise meets) 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.

One mechanism that may provide the same or greater protection and safety is if the approval officer implements a water well sampling program. Therefore, in my opinion, a variance is appropriate provided a water well sampling condition is included.

One indicator that a variance provides the same or greater protection and safety is if the aquifer into which the well is drilled is not likely to be contaminated by the proposed MCA.

The potential risks of direct aquifer contamination from the MCA are presumed to be low if the applicant's proposed MCA meets AOPA's technical requirements to control runoff and leakage. Approval officers may 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 protection of the aquifer in relation to 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 MCA
- d. Whether the well is up- or down-gradient from the MCA and whether this gradient is a reasonable indication of the direction of surface and groundwater flow between the two structures

The water well 2014: ID 1576153

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located immediately south of the most southern existing pen is likely EPA water well ID 1576153. This well is reported to have been installed in 2014 and has a perforated or screened zone from 33.53 m to 51.82 m below ground level across stratigraphy. The well has an above ground casing, is located next to an existing shop and is used for non-domestic purposes. The well's log identifies a clay protective layer from ground surface to 2.44 m below ground level. The well has a bentonite seal from 33.53 m to 51.82 m below ground level (across shale, sandstone, and coal layers). The well appeared to be in good condition at the time of my site inspection and its casing was protected.

The water well 1988: ID451001

Based on information provided by the applicant and from the Alberta Environment and Protected Areas (EPA) water well database, the water well located approximately 48 m east of the most southern existing pen is likely EPA water well ID 451001. This well is reported to have been installed in 1988 and has a perforated or screened zone from 36.58 m to 41.15 m below ground level across stratigraphy. The well has an above ground casing, is located next to an old dairy shelter and is used for non-domestic purposes. The well's log identifies a clay protective layer from ground surface to 3.05 m below ground level. The well has an unknown seal from ground surface to 36.58 m below ground level (across shale, sandstone, and coal layers). The well appeared to be in good condition at the time of my site inspection and its casing was protected.

The water well 2024 (not issued ID yet):

Based on information provided by the applicant, the water well located approximately 68 m east of existing pens is a water well completed in 2024. The well has a perforated or screened zone from 21.33 m to 33.53 m below ground level across stratigraphy. The well is an above ground casing well located next to an existing shop. The well's log identifies a clay protective layer from ground surface to 8.84 m below ground level. The well has a bentonite seal from ground surface to 16.76 m below ground level (across shale, sandstone, and coal layers) with a shale trap installed at 16.76 m. 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 well¹. This tool is useful in gauging the level of protection of groundwater.

I used the water well exemption screening tool to determine if a water well is likely to be impacted when an exemption (or here, variance) is considered. The water well exemption screening tool indicates that there is a low potential for groundwater to be impacted by the MCA.

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

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 existing pens would offer the same degree of protection and safety as that provided for by the regulations for the following reasons:

1. The pens slope away from all existing wells with runoff directed towards the catch basin
2. The wells are all above grade and constructed properly to limit risk of contamination
3. The engineering report for the facilities indicate the use of a compacted clay liner that meets AOPA requirements
4. The existing wells have screened zones where water is drawn in ranging from 21 m to 51.82 m

Based on the above, I am prepared to grant a variance to the 100 m water well setback requirement for the existing pens, however, given the location of the wells and lithology in them I'm including a condition to monitor the water well nearest the feedlot pens (ID 1576153).

APPENDIX E: Explanation of conditions in Approval BA24003

Approval BA24003 includes several conditions, discussed below:

a. Construction above the water table

Section 9(3) 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 pens and catch basin may meet the one metre requirement of section 9(3). However, because the height of the water table can vary over time, a condition is included requiring Crow Farms to cease construction and notify the NRCB immediately if the water table is encountered during construction.

b. Groundwater protection requirements

Crow Farms proposes to construct the new catch basin with a 0.62 metre thick compacted soil liner and pens with a 0.5 metre thick compacted soil liner. 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, Crow 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 1 metre thick compacted soil liner for catch basins and 0.5 m for pens must not be more than 5×10^{-7} cm/sec.

In this case, the lab measurement was 3.2×10^{-8} cm/sec. With the required ten-fold modification, the expected field value is 3.2×10^{-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 catch basin and pens adequately protects groundwater, Approval BA24003 includes a condition requiring Crow Farms to provide a completion report certifying that the catch basin and pens were constructed in accordance with the submitted engineering report.

c. Construction Deadline

Crow Farms proposes to complete construction of the proposed new pens and catch basin by Fall 2026. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of December 1, 2026 is included as a condition in Approval BA24003.

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 BA24003 includes conditions requiring:

- a. Crow Farms to provide a completion report certifying that the catch basin and pens were constructed according to the proposed procedures and design specifications.

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed in accordance with the permit requirements. To be effective, these inspections must occur before livestock or manure are placed in the newly constructed facilities. Approval BA24003 includes conditions stating that Crow Farms shall not place livestock or manure in the manure storage or collection portions of the new pens nor allow manure-impacted runoff to enter the catch basin until NRCB personnel have inspected the facilities and confirmed in writing that they meet the approval requirements.