

Decision Summary BA18025

This document summarizes my reasons for issuing Authorization BA18025 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document BA18025. That document and the full application are available from the decisions search engine on the Natural Resources Conservation Board (NRCB) website at www.nrcb.ca. 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.

1. Background

On December 19, 2018, Slomp Dairy Ltd. submitted a Part 1 application to the NRCB to construct an addition to the dairy barn (32.5 m x 25 m) and permit a previously constructed heifer pen (62.5 m x 30 m) and attached shelter (62.5 m x 19 m) at an existing dairy confined feeding operation (CFO). The heifer pen with attached shelter was constructed without an NRCB permit and was self-reported with the submission of this application. The Part 2 application was submitted on January 8, 2019. On February 5, 2019, I deemed the application complete. On March 14, 2019 Slomp Dairy submitted an updated site drawing and request to increase the length of the proposed dairy barn addition to 32.5 m x 34 m.

The purpose of the proposed dairy barn addition is to convert a portion of the barn to a robotic milking system and move stalls to accommodate the existing milking cow numbers.

There is no proposed increase in livestock.

Under AOPA, this type of application requires an authorization. (This is one of several types of “permits” issued under AOPA. For an explanation of the different types and when each one applies, see www.nrcb.ca.)

a. Location

The existing CFO is located at NE 33-60-3 W5M in the County of Barrhead, roughly 10 km south of Neerlandia, AB. The terrain is relatively flat sloping slightly to the west with the nearest common body of water being a dugout located approximately 348 metres to the north east.

b. Existing permitted facilities

The CFO existed prior to January 1, 2002 with a deemed registration under section 18.1 of AOPA. This deemed registration allows the construction and operation of a dairy CFO. As this application is for an authorization I will not be making an official grandfathering determination at this time. The CFO’s existing facilities which were identified in historical air photos from 1999-2003, 2008, and during site visits are listed in Appendix D attached.

2. Notices to affected parties

Under section 21 of AOPA, notice of an authorization application must be provided to municipalities that are “affected” by the application. Section 5 of AOPA’s Part 2 Matters Regulation lists the categories of municipalities that are affected parties. These categories include the municipality where the existing CFO is located. Under section 21(2) of the act, all affected municipalities are automatically also “directly affected” parties. The NRCB interprets section 21(3) as allowing affected municipalities to provide written submissions regarding

whether the application meets the requirements of the regulations under the act. (See NRCB Operational Policy 2016-7: *Approvals*, part 7.11.2.)

The County of Barrhead is both an affected and directly affected party because the proposed construction is located within its boundaries.

On February 5, 2019 the NRCB emailed referral letters and a copy of the application to the County of Barrhead, Alberta Health Services (AHS), Alberta Environment and Parks (AEP), and Alberta Agriculture and Forestry (AF).

3. Responses from the municipality and referral agencies

I received responses from the County of Barrhead, AEP, and AF. No response was received from AHS.

Jenny Bruns, a development officer with the County of Barrhead, provided a written response on behalf of the county. As noted in section 2, the County of Barrhead is a directly affected party.

Jenny Bruns stated that the application is consistent with the county's municipal development plan (MDP) and its applicable documents. The application's consistency with the county's MDP is addressed in Appendix A, attached.

Jenny Bruns also listed the setbacks required by the county's land use bylaw (LUB). The application meets these setbacks.

Guy Hancock, a senior water administration officer, replied on behalf of AEP. Mr. Hancock provided the water licensing information for the location and concluded that he had no concerns with the application.

Dennis Urban, an inspector, replied on behalf of AF. Mr. Urban stated AF has no concerns with the application. He also indicated that the applicant is reminded that an AF inspection of the new robotic milking area must be completed to ensure it has been constructed in accordance with all applicable dairy industry regulations.

The updated dairy barn plans submitted on March 14, 2019 was sent to both Mr. Urban and Ms. Bruns for their consideration. Neither had any concerns with the change in dimensions.

4. Environmental risk screening of existing and proposed facilities

As part of my review of this application, I assessed the risk to surface water and groundwater posed by the CFO's existing and proposed manure storage facilities. I used the NRCB's environmental risk screening tool for this purpose (see NRCB Operational Policy 2016-7: *Approvals*, part 8.13). The tool 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/Guides on the NRCB website at www.nrcb.ca.)

All of the CFO's existing and proposed facilities pose a low potential risk to groundwater and surface water (The CFO's existing facilities are listed in Appendix D, attached.)

5. Other factors considered

The application meets all relevant AOPA requirements, with the terms and conditions summarized in part 6.¹

In addition, the proposed construction is consistent with the land use provisions of the County of Barrhead's municipal development plan and with the County of Barrhead's land use bylaw. (See Appendix A for a more detailed discussion of the county's planning requirements.)

With respect to the act's technical requirements, the proposed construction:

- Meets the required AOPA setbacks from all nearby residences (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 groundwater protection requirements for the design of floors and liners of manure storage facilities

I also determined that the proposed dairy barn addition and the previously constructed heifer pen with attached shelter is located within the required AOPA setback from two existing water wells. However, as explained in Appendix B, this facility warrants an exemption from the 100 metre water well setback due to the well's construction and location from the facility.

6. Terms and conditions

Authorization BA18025 permits the construction of the dairy barn addition and the use of the heifer pen and shelter.

Authorization BA18025 also 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 BA18025 includes conditions that:

- Set a deadline of December 1, 2021 for the approved construction to be completed
- Require the concrete used to construct the liner of the manure collection and storage portion of the dairy barn addition to meet the specification for category B (liquid manure shallow pits) in Technical Guideline Agdex 096-93 "Non-Engineered Concrete Liners for Manure Collection and Storage Areas"
- Require written confirmation from a qualified third party that the concrete used for the manure collection and storage areas meets the required specifications.
- Prohibit Slomp Dairy from placing manure or livestock in the dairy barn addition until the facility has been inspected by the NRCB following its construction

For an explanation of the reasons for these conditions, see Appendix C.

1. For a summary of these requirements, please see the [2008 AOPA Reference Guide](#), available on the NRCB website at www.nrcb.ca/Guides.

7. Conclusion

Authorization BA18025 is issued for the reasons provided above, in the attached appendices, and in Technical Document BA18025.

April 1, 2019

(Original signed)

Nathan Shirley
Approval Officer

Appendices:

- A. Consistency with the municipal development plan
- B. Exemptions from water well setbacks and monitoring requirements
- C. Explanation of conditions in Authorization BA18025
- D. Existing Facilities

APPENDIX A: Consistency with the municipal development plan

Under section 22 of AOPA, an approval officer may approve an application for an Authorization only if the approval officer finds that the application is consistent with the “land use provisions” of the applicable municipal development plan (MDP).

The NRCB interprets the term “land use provisions” as covering MDP policies that provide generic directions about the acceptability of various land uses in specific areas and that do not call for discretionary judgements relating to the acceptability of a given confined feeding operation (CFO) development. (See NRCB Operational Policy 2016-7: *Approvals*, part 8.2.5.) Under this interpretation, the term “land use provisions” also excludes MDP policies that impose procedural requirements. In addition, 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.”)

Slomp Dairy’s CFO is located in the County of Barrhead and is therefore subject to that county’s MDP. The county adopted the latest revision to this plan on August 17, 2010, under Bylaw No. 4-2010.

Part 3.1.3 of the MDP lists 14 agricultural development policies and includes CFOs as among “primary use[s]” in agricultural use area. The first policy recognizes agriculture as the priority land use in rural areas, supports agricultural diversification, encourages siting agricultural industries in agricultural areas, and discourages non-agricultural land uses in intensive agricultural areas. Of the remaining 13 policies, only policies 10 and 11 relate specifically to CFOs.

Policy 10 states “input shall be provided to the NRCB in responding to 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 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.

Policy 11 states “minimum distance separations for CFOs shall conform to standards set out in AOPA.” The policy’s use of the term “minimum distance separations” appears to be a reference to the minimum distance separation (MDS) requirement in section 3 of the Standards and Administration Regulation under AOPA. MDP policy 11 is not relevant to my MDP consistency determination because it is based on AOPA’s MDS requirements. (See NRCB Operational Policy 2016-7, *Approvals*, part 8.2.5). That said, the CFO meets the MDS requirements under AOPA (with the use of an exemption) and is therefore consistent with this MDP policy.

In my view, the text of the county’s MDP also provides a clear intent to adopt provisions from the land use bylaw (LUB), in section 1.5 of the MDP. Following the NRCB Operational Policy 2016-7: *Approvals*, part 8.2.3, I also consider the County of Barrhead’s Land Use Bylaw No. 5-2010. Under that bylaw, the subject land is currently zoned Agricultural. CFOs are not listed as either a permitted or discretionary land use in this zoning category. Ordinarily, this omission would mean that CFOs are a prohibited land use in this zoning category. However, section 7.13 of the LUB states that the county does not regulate proposed CFO developments that require approvals or registrations under AOPA. This section suggests that the county omitted CFOs from the lists of

permitted and discretionary uses simply because of the county's lack of permitting authority, rather than to prohibit CFOs in the Agricultural district.

I conclude that the application is consistent with the relevant land use provisions of the County of Barrhead's MDP and is not contrary to the county's LUB. The proposed facilities meet the required setbacks identified by the county's LUB. The county's response confirms my conclusion.

APPENDIX B: Exemptions from water well setbacks

According to the application, two water wells are located within 100 metres of the proposed facility. I have confirmed this information during a site visit and using satellite imagery.

Because of this proximity, the applicant's proposed dairy barn addition conflicts with a regulation under AOPA, which prohibits the construction of manure storage facilities (MSFs) within 100 metres of water wells.² However, the regulation allows approval officers to grant an exemption from this prohibition. I must therefore consider whether an exemption is appropriate in this instance.

Under the regulation, the test for granting an exemption is whether the "aquifer into which the well is drilled is not likely to be contaminated" by the proposed MSF. (According to the regulation, when granting an exemption, an approval officer may require the applicant to implement a "groundwater monitoring program.")

The regulation also makes it clear that the applicant has the burden of proving that an exemption is warranted.

In considering whether an applicant has met that burden, approval officers presume that the risks of direct aquifer contamination from the MSF are low if the applicant's proposed MSF meets AOPA's technical requirements to control runoff and leakage. However, when determining whether an MSF that meets AOPA's technical requirements should be exempted from the 100 metre water well setback requirement, approval officers also assess whether water wells that are less than 100 metres from the MSF could act as conduits for aquifer contamination.

Approval officers assess the following factors to determine the risk of aquifer contamination via the water well:

- How the well was constructed
- Whether the well is being properly maintained
- The distance between the well and the proposed MSF
- The estimated water well pumping rate
- 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.

In addition, 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 and to decide whether an exemption from the 100 metre setback to a well is warranted.³ This tool consists of a two-stage risk screening process; each stage provides a numeric risk "score" based on the information inputted into the tool. The first stage focuses on the well's construction. If the well scores less than 10 at this stage, the tool suggests granting a

² Standards and Administration Regulation, Alta. Reg. 267/2001, section 7(1)(b).

³ The tool, and a companion document explaining how it works, can be viewed on the NRCB's website at: www.nrcb.ca.

setback exemption for the subject facility. If the well scores above 28, the tool recommends denying the exemption. Scores between 10 and 28 require applying the second stage of the screening process, which focuses on the gradient and other factors bearing on the risk of manure runoff or leachate reaching the water well. If the risk score at this stage is over 20, the tool suggests denying the setback exemption to the subject well.

The wells in question are:

- Water well ID 418274: is a deep rotary drilled well completed with a driven seal. It's located adjacent to the existing dairy barn and is perforated at 18.29 m into a varved shale a coal lithology to a depth of 41.15 m.
- Water well ID 468444: is a deep rotary drilled is logged and completed identically to ID 418274. It's located near the house and is also perforated at 18.29 m into a varved shale coal lithology to a depth of 41.15 m.

An exemption from the 100 metre setback to this wells is warranted, for the following reasons:

- The MSF meets all other AOPA technical requirements, as noted in the attached decision summary and documented in Technical Document BA18025. Therefore, the risk of manure-contaminated water leaking or running off from the MSF is low.
- In the unlikely event that any manure did leave the MSFs, it is unlikely to migrate directly into the aquifer into which the wells are drilled because of the clay protective layer above the aquifer.
- In the unlikely event that any manure reaches the wells, the manure is unlikely to actually enter the wells and flow down the well into the aquifer. This risk pathway is very unlikely because of the wells' construction, landscaping, and location.

In addition, 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 and to decide whether an exemption from the 100 metre setback to a well is warranted. This tool consists of a two-stage risk screening process; each stage provides a numeric risk "score" based on the information inputted into the tool. The first stage focuses on the well's construction. If the well scores less than 10 at this stage, the tool recommends granting the exemption for the subject facility. If the well scores above 28, the tool recommends denying the exemption. Scores between 10 and 28 require applying the second stage of the screening process, which focuses on the gradient and other factors bearing on the risk of manure runoff or leachate reaching the water well. If the risk score at this stage is more than 20, the tool suggests denying the setback exemption to the subject well.

In this case water wells ID 418274 scored 13 and ID 468444 scored 15 in the first stage and 11 and 5 in the second stage, respectively, following the risk screening process described above.

For the above reasons, a groundwater monitoring program is not required and an exemption is granted.

APPENDIX C: Explanation of conditions in Authorization BA18025

Authorization BA18025 includes several conditions, discussed below:

a. Construction Deadline

Slomp Dairy proposes to complete construction of the proposed dairy barn addition by fall 2021. This time-frame is considered to be reasonable for the proposed scope of work. The deadline of December 1, 2021 is included as a condition in Authorization BA18025.

b. 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 BA18025 includes conditions requiring:

- the concrete used to construct the liner of the manure collection and storage portion of the dairy barn addition to meet the specification for category B (liquid manure shallow pits) in Technical Guideline Agdex 096-93 "Non-Engineered Concrete Liners for Manure Collection and Storage Areas."
- Slomp Dairy to provide proof confirming the specifications of the concrete used to construct the manure collection and storage portion of the dairy barn addition.

The NRCB routinely inspects newly constructed facilities to assess whether the facilities were constructed according to their required design specifications. To be effective, these inspections must occur before livestock or manure are placed in the newly constructed facilities. Authorization BA18025 includes a condition stating that Slomp Dairy shall not place livestock or manure in the manure storage portions of the dairy barn addition until NRCB personnel have inspected the facility and confirmed in writing that it meets the authorization requirements.

APPENDIX D: Existing facilities

Slomp Dairy claims that its CFO's physical capacity on January 1, 2002 was 180 milking cows. As this application is an authorization and did not require public notice, I will not be making a formal grandfathering determination at this time.

Based on information gathered during my site visit, details provided by the applicant, and historical aerial photos from 1999-2003 and 2008. I determined the following facilities existed on January 1, 2002:

- Dairy barn – 49 m x 33 m (with 174 stalls)
- Earthen Manure Storage – 75 m x 41 m x 6 m
- Heifer/calf barn – 63 m x 13 m
- Feed pen 1 – 100 m x 60 m (dairy barn addition to be built over top)
- Feed pen 2 – 58 m x 59 m
- Feed pen 3 – 48 m x 14 m
- Solid manure storage pad 1 – 40 m x 30 m
- Solid manure storage pad 2 – 40 m x 50 m