

Decision Summary RA18074

This document summarizes my reasons for issuing Authorization RA18074 under the *Agricultural Operation Practices Act* (AOPA). Additional reasons are in Technical Document RA18074. 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 October 26, 2018, Jireh Dairies submitted a Part 1 application to the NRCB to replace an existing dairy barn that was lost to fire at an existing confined feeding operation (CFO). The Part 2 application was submitted on January 22, 2019. On January 30, 2019, I deemed the application complete.

The proposed construction involves:

- Constructing a new dairy barn (80 m x 42 m)
- Constructing an in-barn manure collection pit (8.5 m x 4.9 m x 2.1 m deep)

There is no proposed increase in livestock.

Hereinafter, the new dairy barn and in-barn manure pit will be referred to as the dairy barn.

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 NW 25-47-24 W4M in Wetaskiwin County, roughly 4.8 km (3.0 miles) east of Millet, on the south side of secondary highway 814. The terrain is flat to gently sloping. The topography of the land located to the south and west (including the SE 26-47-24 W4) is undulating and slopes gently to the east.

b. Existing permitted facilities

The CFO was originally permitted by Wetaskiwin County on April 25, 2001 under development permit #01/25. This permit allowed the construction and operation of a dairy CFO with 120 milking cows.

On November 19, 2008, Approval RA07046 was issued by the NRCB. Decision Summary RA07046 explained that the dairy operation existed on January 1, 2002, with the capacity to hold 200 milking cows (plus dries and replacements). Approval RA07046 also granted the expansion of the CFO from 200 milking cows to 300 milking cows (plus associated dries and replacements). On December 11, 2017 the NRCB received a request by the operator that Approval RA07046 be cancelled as they did not plan on expanding to the 300 milking cow capacity. Although Approval RA07046 was cancelled, the recognition of the deemed permit remains. The CFO’s permitted livestock capacity was reduced from 300 to its deemed capacity of 200 milking cows (plus associated dries and replacements).

The CFO's deemed facilities are listed in Appendix A of Authorization RA18074.

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 Operational Policy 2016-7: *Approvals*, part 7.11.2.)

Wetaskiwin County is both an affected and directly affected party because the proposed facility is located within its boundaries.

On January 30, 2019, the NRCB emailed referral letters and a copy of the application to Wetaskiwin County; Alberta Health Services (AHS); Alberta Environment and Parks (AEP); Alberta Agriculture and Forestry (AF); and Alberta Transportation.

3. Responses from the municipality and referral agencies

The NRCB received responses from Wetaskiwin County, AEP, AHS, and AF. A response was not received from Alberta Transportation.

Mr. Jarvis Grant, a development officer with Wetaskiwin County, provided a written response on behalf of the County. As noted in section 2, Wetaskiwin County is a directly affected party.

Mr. Grant stated that the application is consistent with Wetaskiwin County's municipal development plan (MDP). Mr. Grant did note that there are four residences that fall within the established MDS and that the CFO is located on the boundary of the Millet-Wetaskiwin Acreage Study Area. The application's consistency with Wetaskiwin County's MDP, is addressed in Appendix A, attached.

Mr. Grant also stated that the application meets the required municipal setbacks for development as stated under the county Land Use Bylaw 2017/48.

Mr. Jeff Presley, an inspection specialist with AF, completed a review of the drawings provided and had no concerns. He stated that he would complete inspections to ensure no regulations are violated.

Mr. Gordon Watt, an executive officer / public health inspector with AHS, completed a review of the application. Mr. Watt recommended that approval be granted on the application.

The NRCB also received a response from Ms. Laura Partridge, a senior water administration technologist at AEP. Ms. Partridge indicated that no additional water licensing is required for the CFO as there is no change in animal numbers.

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 the Appendix to Authorization RA18074.)

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 dairy barn is consistent with the land use provisions of Wetaskiwin County's municipal development plan. (See Appendix A for a more detailed discussion of the county's planning requirements.)

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

- Meets the required AOPA setbacks except for one resident (AOPA setbacks are known as the "minimum distance separation" requirements, or MDS). However, in this case, Jireh Dairies proposes to build a new building on a CFO site, and as there is no increase in animal numbers there will be no increase in total annual manure production. Under Section 3(5)(c) of the Standard and Administration Regulation, an approval officer can still issue a permit.
- 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 and existing corrals are located within the required AOPA setback from two existing water wells. However, as explained in Appendix B, the existing corrals and proposed dairy barn warrant an exemption from the 100 metre water well setback due to the wells' construction and location from the facilities.

6. Terms and conditions

Authorization RA18074 permits the construction of the replacement dairy barn.

Authorization RA18074 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 RA18074 includes conditions that:

- Set a deadline of December 31, 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:
 - pit below the dairy barn to meet the specification for category B (liquid manure

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

- shallow pits) in Technical Guideline Agdex 096-93 “Non-Engineered Concrete Liners for Manure Collection and Storage Areas”.
- scrape alleys in the dairy barn to meet category C (solid manure wet) 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 Jireh Dairies from placing manure or livestock in the dairy barn until the facility has been inspected by the NRCB following its construction.

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

7. Conclusion

Authorization RA18074 is issued for the reasons provided above, in the attached appendices, and in Technical Document RA18074.

March 15, 2019

(Original Signed)
Fraser Grant
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 RA18074

APPENDIX A: Consistency with the municipal development plan

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

Jireh Dairies’ CFO is located in Wetaskiwin County and is therefore subject to that county’s MDP. Wetaskiwin County adopted the latest revision to this plan on August 11, 2016, under Bylaw 2016/55.

As relevant here, Objective 1.4 of the MDP aims to “minimize ... land use conflict” between CFOs and “surrounding land uses.” Following this statement, the MDP notes that, while CFOs are under provincial jurisdiction, it is the county’s intent to “minimize” the “negative effect” of CFOs. The MDP also reports the county’s view that, the *Municipal Government Act* “requires” the county to identify where new CFOs may be located.

These statements are likely not “land use provisions” by themselves, but they provide context for considering five policies listed under Objective 1.4.

The first of five policies in Objective 1.4 states that the “minimum distance setback [MDS] of Alberta Agriculture Code of Practice, as amended, should be maintained.” It is unclear whether this policy was meant to apply to only new or expanding CFOs and/or to CFOs that are now permitted by the NRCB rather than the county.

In addition:

- the code of practice referenced in this policy was effectively replaced by AOPA, for NRCB-permitted CFOs. Thus, the reference to the Code’s MDS provisions “as amended” likely now refers to the MDS requirements in the Standards and Administration Regulation under AOPA.
- NRCB policy is clear that approval officers should not consider MDP provisions that are based on or modify the MDS requirement under AOPA. See NRCB Operational Policy 2016-7: *Approvals*, part 8.2.5.

At any rate, as noted in Technical Document RA18074, while the proposed dairy barn is located within the MDS of a residence located at NE-26-47-24 W4M, the proposed barn remains within the existing footprint of the dairy CFO. There will be no increase in animal numbers or annual manure production; therefore, in accordance with section 3(5)(c) of the Standards and Administration Regulation, an authorization can be issued even if the application does not meet the MDS.

Not one of the remaining three policies under Objective 1.4 applies to Jireh Dairies' application:

- 1.4.2 relates to “intensive livestock operations” that are permitted by the county.
- 1.4.3 lists setbacks for “new” CFOs, which does not apply to this application.
- 1.4.4 and 1.4.5 relate to the siting of new residences near the Millet-Wetaskiwin Acreage Study Area. The Millet-Wetaskiwin Acreage Study Area relates to the siting of residences, not CFOs.

For the above reasons, I consider the application to be consistent with the land use provisions of the County's MDP. The county's response to the application confirms this conclusion.

APPENDIX B: Exemptions from water well setbacks

According to the application, two water wells are located within 100 metres of the proposed dairy barn and existing corrals, which are both manure storage facilities. I have confirmed this information by site visit and through review of scaled air photos. Well ID 237409 is located 40 metres northeast of the existing corrals and 53 metres north of the proposed dairy barn. Well ID 296910 is located 60 metres east of the existing corrals and 27 metres northeast of the proposed dairy barn.

Because of this proximity, the applicant's proposed dairy barn 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 before the facility is constructed. 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."³)

The regulation also makes it clear that the applicant has the burden of demonstrating 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

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

³ Standards and Administration Regulation, Alta. Reg. 267/2001, section 7(2).

warranted.⁴ 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 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.

Water Well ID 237409

Water well ID 237409 is located 40 metres northeast of the existing corrals and 53 metres north of the proposed dairy barn. Usually, the surface slope is an indicator of the direction of groundwater flow. In this case, the well is located up-gradient from both the existing corrals and proposed dairy barn, so the groundwater is unlikely to flow from below either of those areas toward water well ID 237409.

Well ID 237409 is located in the basement of the on-site house and is therefore considered to be located in a pit. According to the water well drilling report, the well is reported to have been installed in 1980. This well’s log does not specify a perforated zone. However, the log does indicate that the surface casing extends to 24.99 metres below ground level. The log also identifies interbedded sandstone and shale layers from 19.81 metres below ground to 36.58 metres, the maximum depth drilled. Those layers are reported to produce approximately 45 litres per minute. The well’s log identifies a clay layer from grade to 19.81 metres below ground and reports a driven seal at 24.99 metres.

Water well ID 237409 scored 27 and 17 in the first stage and second stages, respectively, of the risk screening process described above.

Based on the risk scorings, an exemption from the 100 metre setback to water well ID 237409 is warranted.

Water Well ID 296910

Water well ID 296910 is located 60 metres east of the existing corrals and 27 metres northeast of the proposed dairy barn. Usually, the surface slope is an indicator of the direction of groundwater flow. In this case, the well is located up-gradient from both the existing corrals and proposed dairy barn, so the groundwater is unlikely to flow from below either of those areas toward water well ID 296910.

According to the water well drilling report, the well is reported to have been installed in 2001. The well is perforated from 38.10 metres below ground level to 44.20 metres and has a casing that extends from approximately 1.5 feet above grade to 38.71 metres below grade. The log also identifies interbedded sandstone and shale layers from 22.86 metres below ground to 45.72 metres, the maximum depth drilled. Those layers are reported to produce approximately 45 litres per minute. The well’s log identifies a clay with rocks layer from grade to 18.90 metres.

Water well ID 296910 scored 12 and 9 in the first and second stages, respectively, of the risk screening process described above.

⁴ The tool, and a companion document explaining how it works, can be viewed on the NRCB’s website at: www.nrcb.ca.

Based on the risk scorings, an exemption from the 100 metre setback to water well ID 296910 is warranted.

APPENDIX C: Explanation of conditions in Authorization RA18074

Authorization RA18074 includes several conditions, discussed below:

a. Construction Deadline

Jireh Dairies proposes to complete construction of the proposed new dairy barn by December 31, 2023, which is five construction seasons from when the authorization is issued. In my opinion, a construction schedule that allows three construction seasons is more realistic for the proposed development. Therefore, Authorization RA18074 includes a condition stating a deadline of December 31, 2021.

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 facility is constructed according to the required design specifications. Accordingly, Authorization RA18074 includes a condition requiring the concrete used to construct the liner of the manure collection and storage portion of the dairy barn to meet the specification for category B (liquid manure shallow pits) for the pit and category C (solid manure wet) for the scrape alleys in Technical Guideline Agdex 096-93 "Non-Engineered Concrete Liners for Manure Collection and Storage Areas." Jireh Dairies shall provide written confirmation, signed by a qualified third party, that the concrete used for the manure collection and storage area meets the required specifications.

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 RA18074 includes a condition stating that Jireh Dairies shall not place livestock or manure in the manure storage portions of the new dairy barn until NRCB personnel have inspected the dairy barn and confirmed in writing that it meets the authorization requirements.