Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

NRCB USE ONLY	Application number	Legal land description
☒ Approval ☐ Registration ☐ Authorization ☐ Amendment	LA25019	Sec. 28-10-25 W4M

APPLICATION DISCLOSURE

This information is collected under the authority of the *Agricultural Operation Practices Act* (AOPA), and is subject to the provisions of the *Freedom of Information and Protection of Privacy Act*. This information is public unless the NRCB grants a written request that certain sections remain private.

Any construction prior to obtaining an NRCB permit is an offence and is subject to enforcement action, including prosecution.

I, the applicant, or applicant's agent, have read and understand the statements above, and I acknowledge that the information provided in this application is true to the best of my knowledge.

Feb 26/25
Date of signing

[redacted]
Signature

HB of Jumbo Valley Colony
Corporate name (if applicable)

MARK TSCHETTER
Print name

GENERAL INFORMATION REQUIREMENTS

Proposed facilities: list all proposed confined feeding operation facilities and their dimensions. Indicate whether any of the proposed facilities are additions to existing facilities. (attach additional pages if needed)

Proposed facilities	Dimensions (m) (length, width, and depth)
Dairy barn (AO comment: see attached plan for layout)	285.4'-210'+ (Part 1)
	260'-110' (Part 2)
Sand lain/sand storage building	257'-70'
Lagoon	124x153x3.3 m

Existing facilities: list **ALL** existing confined feeding operation facilities and their dimensions

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
AO comment: see next page		

NRCB USE ONLY

Existing facilities

Facility	Dimensions (m)	Permit
Dairy barn	65 m x 35 m	Deemed permit
Parlour	51 m x 12 m	Deemed permit
Calving barn	24 m x 24 m	Deemed permit
Replacement pens	56 m x 23 m 54 m x 6 m 57 m x 18 m 131 m x 45 m 89 m x 43 m	Deemed permit
Open shelter	48 m x 6.5 m	Deemed permit
Catch basin	7 m x 5 m x 2 m deep	Deemed permit
Concrete pad	10 m x 9 m	Deemed permit
Lagoon	61 m x 32 m x 6.5 m deep	Deemed permit
Mixed poultry barn	42.7 m x 12.2 m	Approval LA17016
Broiler barn	121.9 m x 24.5 m	Approval LA16050

Other existing facilities:

Permitted under Approval LA 180222:

Turkey barn (158.5 m x 24.4 m)

Calf barn (33.5 m x 15.8 m)

Faciliteis permitted under Authorization LA21013:

Heifer shed (174 m x 24.5 m)

Exercise pen (174 m x30.5 m)

Catch basin (43 m x 31 m x 2.4 m)

Solid manure storage pad (152 m x 152 m)

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

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If a new facility is replacing an old facility, please explain what will happen to the old facility and when. ☐ **N/A**

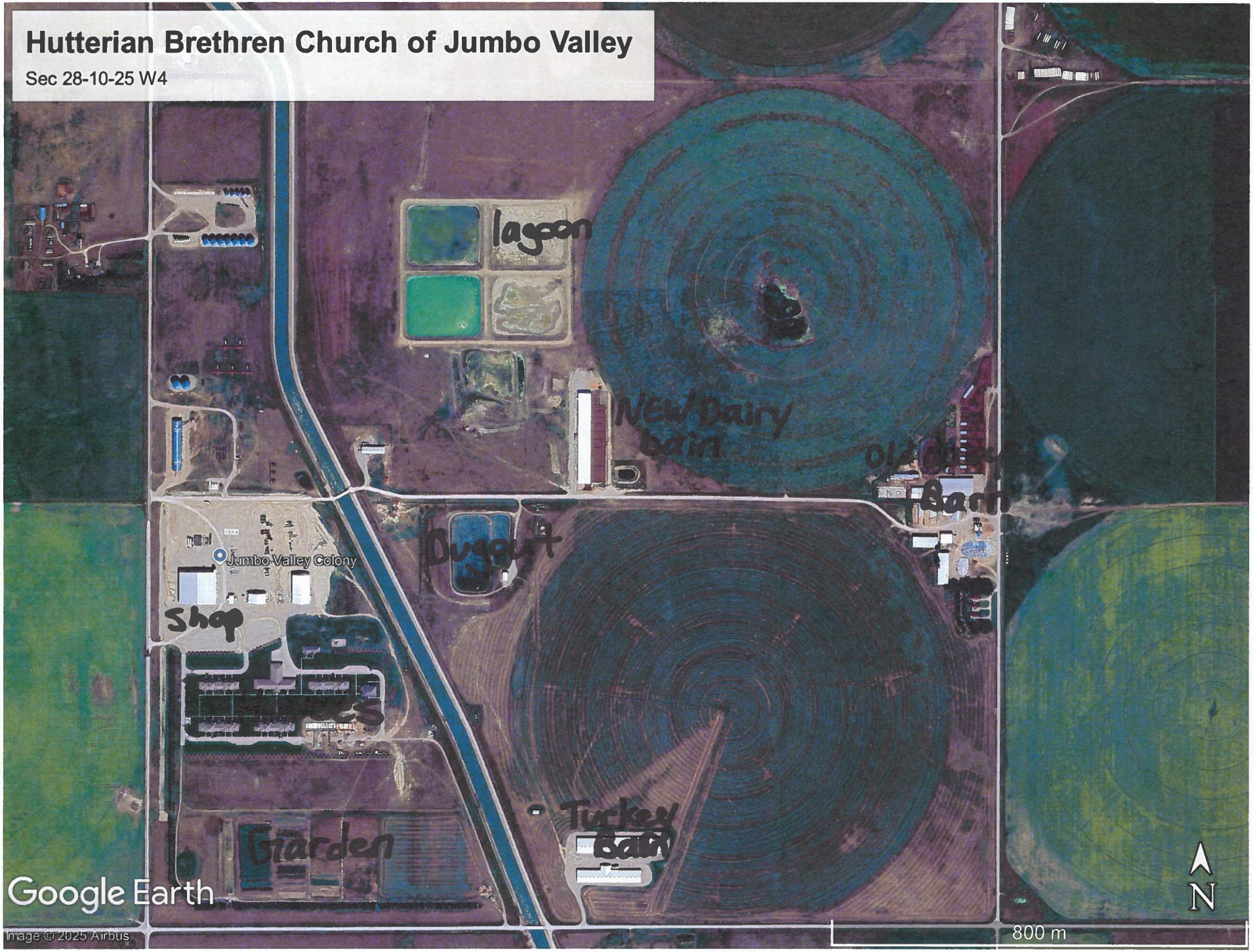
Old dairy facility will be used for replacment heifers.
The old ~~man~~ lagoon will be ~~decommition~~ decommissioned.

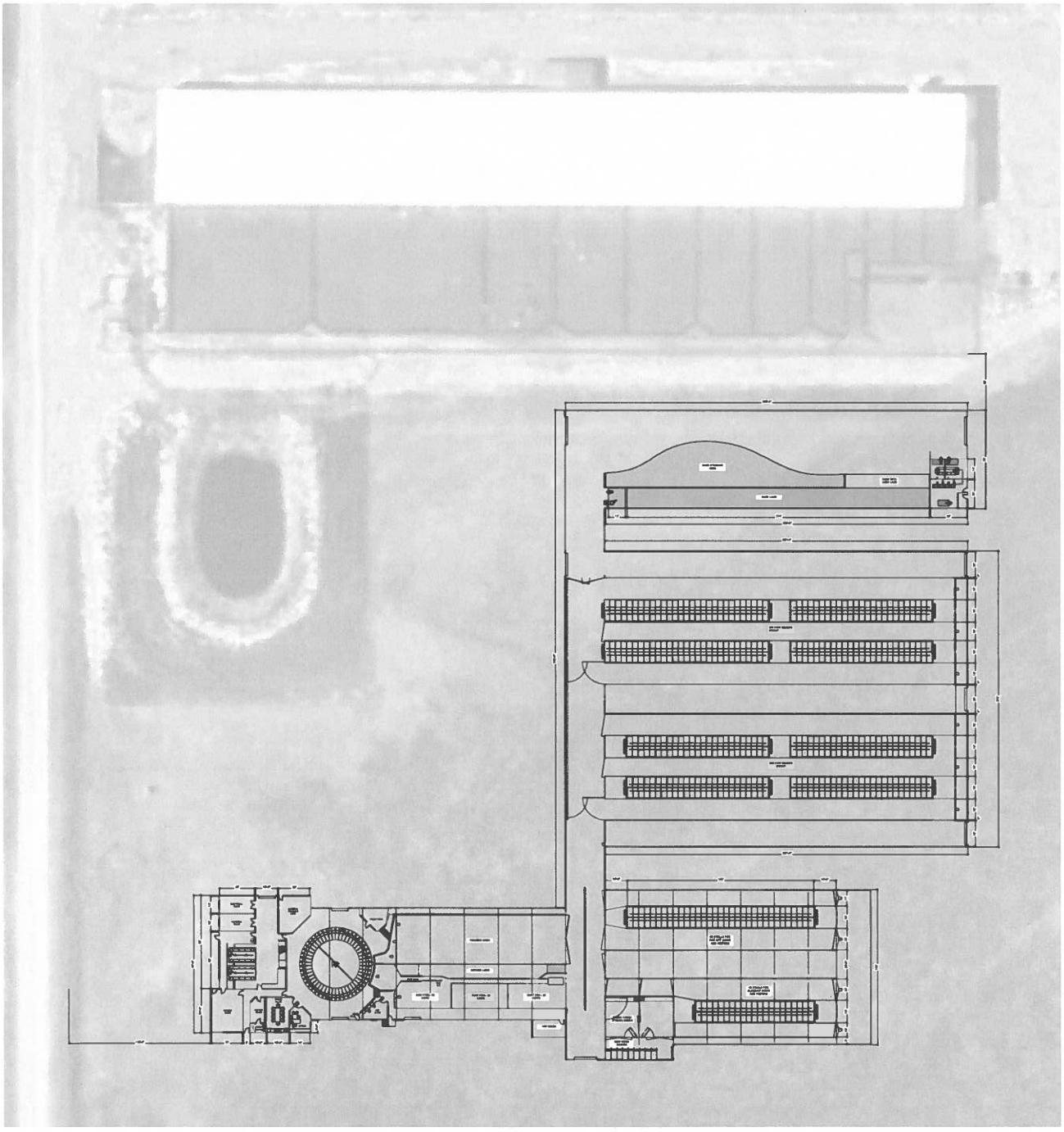
Construction completion date for proposed facilities December 2023

Additional information

Livestock numbers: Complete only if livestock numbers are different from what was identified in the Part 1 application. Note: if livestock numbers increase in your Part 2 application, a new Part 1 application must be submitted which may result in a loss of priority for minimum distance separation (MDS).

Livestock category and type (Available in the Schedule 2 of the Part 2 Matters Regulation)	**Permitted number**	**Proposed increase or decrease in number (if applicable)**	**Total**


Hutterian Brethren Church of Jumbo Valley
Sec 28-10-25 W4
lagoon
New Dairy barn
Old Dairy Barn
Jumbo Valley Colony
Shop
Garden
Turkey Barn
Google Earth
Image © 2025 Airbus
800 m
N



Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

DECLARATION AND ACKNOWLEDGMENT OF APPLICANT CONCERNING *WATER ACT* LICENCE

issued by Alberta Environment and Parks (AEP) for a confined feeding operation (CFO)

Date and sign one of the following four options

OPTION 1: Applying through the NRCB for both the AOPA permit and the *Water Act* licence

I **DO** want my water licence application coupled to my AOPA permit application.

Signed this ____day of _____, 20____. _____

Signature of Applicant or Agent

OPTION 2: Processing the AOPA permit and *Water Act* licence separately

1. I (we) acknowledge that the CFO will need a new water licence from AEP under the *Water Act* for the development or activity proposed in this AOPA application.
2. I (we) request that the NRCB process the AOPA application **independently of** AEP's processing of the CFO's application for a water licence.
3. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be considered by AEP as improving or enhancing the CFO's eligibility for a water licence under the *Water Act*.
4. I (we) acknowledge that any construction or actions to populate the CFO with livestock pursuant to an AOPA permit in the absence of a *Water Act* licence will **not** be relevant to AEP's consideration of whether to grant the *Water Act* licence application.
5. I (we) acknowledge that any such construction or livestock populating will be at the CFO's sole risk if the *Water Act* licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the *Water Act*. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined in the *Water Act*).
6. **AS RELEVANT:** I (we) acknowledge that the CFO is located in the South Saskatchewan River Basin and that, pursuant to the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order* [Alta. Reg. 171/2007], this basin is currently closed to new surface water allocations.

Signed this ____ day of _____, 20____. _____

Signature of Applicant or Agent

OPTION 3: Additional water licence not required

1. I (we) declare that the CFO will not need a new licence from AEP under the *Water Act* for the development or activity proposed in this AOPA application.

Signed this 26 day of February, 20 25 _____ [redacted]

Signature of Applicant or Agent

OPTION 4: Uncertain if *Water Act* licence is needed: acknowledgement of risk (for existing CFOs only)

1. At this time, I (we) do not know whether a new water licence is needed from AEP under the *Water Act* for the development or activity proposed in this AOPA application.
2. If a new *Water Act* licence is needed, I (we) request that the NRCB process the AOPA application **independently of** AEP's processing of the CFO's application for a water licence.
3. In making this request, I (we) recognize that, if this AOPA application is granted by the NRCB, the NRCB's decision will not be considered by AEP as improving or enhancing the CFO's eligibility for a water licence under the *Water Act*.
4. I (we) acknowledge that any construction or actions to populate the CFO with additional livestock pursuant to an AOPA permit in the absence of a *Water Act* licence will **not** be relevant to AEP's consideration of whether to grant my *Water Act* licence application, if a new water licence is needed.
5. I (we) acknowledge that any such construction or livestock increase will be at the CFO's sole risk if the *Water Act* licence application is denied or if the operation of the CFO is otherwise deemed to be in violation of the *Water Act*. This risk includes being required to depopulate the CFO and/or to cease further construction, or to remove "works" or "undertakings" (as defined in the *Water Act*).
6. **AS RELEVANT:** I (we) acknowledge that the CFO is located in the South Saskatchewan River Basin and that, pursuant to the *Bow, Oldman and South Saskatchewan River Basin Water Allocation Order* [Alta. Reg. 171/2007], this basin is currently closed to new surface water allocations.

Signed this ____ day of _____, 20____. _____

Signature of Applicant or Agent

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

GENERAL ENVIRONMENTAL INFORMATION

(complete this section for the worst case of the existing facility which is the closest to water bodies or water wells and for each of the proposed facilities)

Facility description / name *(as indicated on site plan)*

Existing: Heifer shed **Proposed 1:** Dairy barn

Proposed 2: lagoon **Proposed 3:**

Facility and environmental risk information		Facilities				NRCB USE ONLY	
		Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments
Flood plain information	What is the height of the floor of the lowest manure storage or collection facility above the 1:25 year flood plain or the highest known flood level?	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☑ >1 m ☐ ≤ 1 m	☐ > 1 m ☐ ≤ 1 m	☐ YES ☐ NO ☐ YES with exemption	
Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	none	none	none		☐ YES ☐ NO ☐ YES with exemption	
	How many water wells are within 100 m of the manure storage facility or manure collection area?	none	none	none		☐ YES ☐ NO ☐ YES with exemption	
	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)		494m to canal	395m to canal		☐ YES ☐ NO ☐ YES with exemption	
Groundwater information	What is the depth to the water table?		5.2m	5.2m		☐ YES ☐ NO ☐ YES with exemption	
	What is the depth to the groundwater resource/aquifer you draw water from?	11.89m	11.89m	11.89m		☐ YES ☐ NO ☐ YES with exemption	

Additional information (attach supporting information, e.g. borehole logs, records, etc. you consider relevant to your application)

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area, and/or manure storage facility(ies)

DISTANCE OF ANY MANURE STORAGE FACILITY (EXISTING OR PROPOSED) TO NEIGHBOURING RESIDENCES

			NRCB USE ONLY				
Neighbour name(s)	**Legal land description**	**Distance (m)**	**Zoning (LUB) category**	**MDS category (1-4)**	**Distance (m)**	**Waiver attached (if required)**	**Meets regulations**
Goedhart	NE-29-10-25 W4M	630					
Veenland	NE-20-10-25 W4M	969					
Ashley	NW-22-10-25 W4M	1196					

LAND BASE FOR MANURE AND COMPOST APPLICATION (complete only if an increase in livestock or manure production will occur)

				NRCB USE ONLY	
Name of land owner(s)*	**Legal land description**	**Usable area** (ha)**	**Soil zone ***	**Usable area (ha)**	**Agreement attached (if required)**
HB of Jumbo Valley	S 1/2 -29-10-25 W4M	124	irr		
	S 1/2 -27-10-25 W4M	124	irr		
	NW 27-10-25 W4M	63	irr		
	SW 2-11-25 W4M	63	irr		
	E 1/2 3-11-25 W4M	124	irr		
			Total		

* If you are **not** the registered landowner, you must attach copies of land use agreements signed by all landowners.

** Available manure spreading area (excluding setback areas from residences, common bodies of water, water wells, etc. as identified in Agdex 096-5 Manure Spreading Regulations)

*** Brown, dark brown, black, grey wooded, or irrigated

Additional information (attach any additional information as required)

Part 2 — Technical Requirements

NRCB Natural Resources Conservation Board

Application under the *Agricultural Operation Practices Act* for a confined feeding operation, manure collection area and/or manure storage facility(ies)

LIQUID MANURE STORAGE: Earthen manure storage (EMS): Naturally occurring protective layer

*(complete a copy of this section for **EACH** proposed earthen liquid manure storage facility with a naturally occurring protective layer)*

Facility description / name *(as indicated on site plan)*

1. lagoon
2.

Manure storage capacity *(complete a separate row of this table for each cell of the EMS)*

	Length (m)	Width (m)	Total depth (m)	Depth below ground level (m)	Slope run:rise			NRCB USE ONLY	
					Inside end walls	Inside side walls	Outside walls	Calculated storage capacity (m^3) (excl. 0.5 m freeboard)	Filled in lower ¼? Y/N
1.	124	153	3.3	3.3	3:1	3:1	NA		
2.									
							TOTAL CAPACITY		

Surface water control systems

Describe the run-on and runoff control system

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	3.1 (m)	Provide details (as required)	
Soil texture	23 % sand	47 % silt	30 % clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested: 9.2 Till	Hydraulic conductivity (cm/s): 1.8×10^{-8}	Describe test standard used: Falling head test

Additional information *(attach copies of soil test reports)*

NRCB USE ONLY

Requirements met: ☐ YES ☐ NO

Condition required: ☐ YES ☐ NO

Report attached: ☐ YES ☐ NO

----JLECS----

J Lobbezoo Engineering & Consulting Services Ltd.
PO Box 96, Monarch, AB T0L1M0

16 January 2025

JLECS File: P24078

Hutterian Brethren Church of Jumbo Valley
PO Box 730
Fort Macleod, Alberta T0L 0Z0

Attention: Mr. Tim Tschetter

Re: Geotechnical Review and Evaluation
NRCB Permitting of Existing Lagoon Cell
NW-28-010-25-W4M, near Granum, Alberta

As requested, J Lobbezoo Engineering & Consulting Services Ltd. (JLECS) has carried out a geotechnical review and evaluation of the above-captioned site relative to the required protection of the groundwater resource, as required by the Agricultural Operation Practices Act, AB Reg. 267/2001 (hereinafter referred to as "AOPA"). This letter describes the site soil conditions to support a permit application related to the permitting of an existing lagoon cell for manure storage (refer to Figure 1, attached). The existing lagoon cell was constructed in about 2008 as a fourth cell associated with a sanitary lagoon system which services the Jumbo Valley Colony, and has reportedly never been used for that purpose. Accordingly, the intent is to repurpose the redundant lagoon cell for manure storage.

While the existing lagoon cell was constructed with a compacted clay liner (in general accordance with Alberta Environment's publication "Design and Construction of Liners for Municipal Wastewater Stabilization Ponds"), construction records related to the existing lagoon construction were not available. Accordingly, in order to demonstrate the suitability of the naturally existing soils for consideration as a naturally occurring protective layer to the groundwater resource, four boreholes were advanced at the site on December 11, 2024. The boreholes were advanced at the approximate locations denoted as JC1-24 to JC4-24 on Figure 1, attached.

The boreholes were advanced by a truck-mounted drill rig owned and operated by Chilako Drilling Services and extended to depths of 7.4 m to 12.0 m below the existing grade. The boreholes were logged by Larry Delong of Chilako Drilling Services.

In general, the natural mineral soils encountered in the boreholes consisted of a thin layer of fluvial and lacustrine loam soils (comprised of silt, sand & clay) overlying soft mudstone bedrock below about 2.6 m to 3.0 m depth (below natural grade). It is understood that the lagoon was constructed by excavating the overburden soils, and replacing with compacted clay. While minor perched groundwater (seepage) was noted at 5.2 m depth (below the top of berm) in borehole JC4-24, no groundwater resource (as defined by the AOPA) was encountered within the 12.0 m investigation depth at this site.

Samples of soil collected from the screened zones of boreholes JC1-24 as well as samples from similar depths at the other boreholes were all subjected to grain size analyses, which was carried out by Down to Earth Laboratories in Lethbridge, Alberta. The lab report is attached, for reference. The results indicate a soil texture breakdown of:

Table 1: Soil Texture Analyses

Borehole/Depth	% Sand	% Silt	% Clay
JC1-24 / 4.5 – 6.0 m	24	56	20
JC2-24 / 6.0 – 7.5 m	20	44	36
JC3-24 / 4.5 – 6.0 m	13	45	42
JC4-24 / 6.8 – 7.5 m	35	45	20
Average:	*23*	*47*	*30*

To measure the *in situ* permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in borehole JC1-24. The test well was screened from 4.3 m to 7.4 m depth. Well saturation of the 50 mm diameter monitoring well was carried out by filling the monitoring well to the top for several consecutive days. After several days of testing, a 24-hour water drop of 0.45 m determined for test well JC1-24.

To calculate the permeability of the screened portion of the clay strata at the test well location, a modified falling head test (as outlined in the USBR Engineering Geology Field Manual Volume 2 [2001]) was used. The input variables and output data are outlined on the attached In Situ Permeability Test report. The results of the permeability testing indicate an *in situ* hydraulic conductivity (k_s) values of 1.8×10^{-8} cm/s.

Using the measured permeability of the subsurface strata at this site, the 3.1 m mudstone screened at test hole JC1-24 is estimated to represent the equivalent of over 100 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s (the reference standard in AOPA). This represents natural material protection in excess of the minimum requirements outlined by the AOPA for lagoons (minimum 10 m, Section 9.5-a).

JLECS

Conclusion

Based on the results of the current investigation, permeability testing, and our understanding of the site and development at the site, it is JLECS's opinion that the naturally occurring materials at the site satisfy the AOPA requirements for permitting the existing lagoon and pens at this location, and that the naturally occurring materials also satisfy the AOPA requirements for permitting a proposed catch basin at the site, if proposed.

We trust that this report satisfies your present requirements. Should you have any questions, please contact the undersigned at your convenience.

Yours truly,

J Lobbezoo Engineering & Consulting Services Ltd.

PROFESSIONAL ENGINEER ALBERTA
JOHN P. LOBBEZOO
ID 110450

16 Jan 2025

John Lobbezoo, P.Eng.
Principal Geotechnical Engineer

PERMIT TO PRACTICE
J LOBBEZOO ENGINEERING & CONSULTING SERVICES LTD.
RM SIGNATURE: _____
RM APEGA ID #: 110450
DATE: 16 Jan 2025
PERMIT NUMBER: P016456
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Attachments
- Figure 1 Borehole Locations
- In Situ Permeability Test Calculations
- Down to Earth Soil Texture Results
- Soil Profile and Parent Material Description, Chilako Drilling Services

Figure 1: Site Layout & Borehole Locations

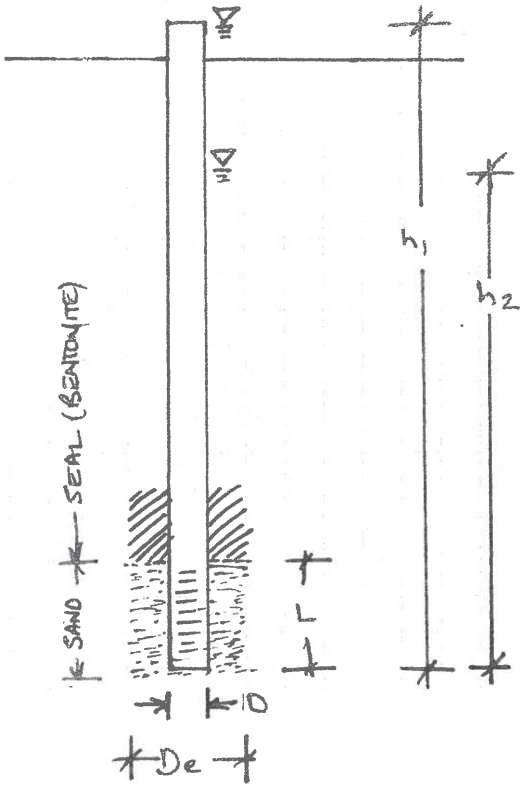
JC1-24

In Situ Permeability Test

Modified Falling Head Permeability Equation

$$K_s = \frac{r^2}{2\ell\Delta t}\left[\frac{\sinh^{-1}\frac{\ell}{r_e}}{2}\ln\left[\frac{2H_1-\ell}{2H_2-\ell}\right]-\ln\left[\frac{2H_1H_2-\ell H_2}{2H_1H_2-\ell H_1}\right]\right]$$

taken from USBR Engineering Geology Field Manual Volume 2 (2001)



JC1-24 - Hutterian Brethren Church of Jumbo Valley

JLECS File: P24078

INPUT VARIABLES

Terms	Value	Definition
D	0.0520	diameter of standpipe (m)
De	0.1500	diameter of borehole (m)
L	3.10	length of sand section (m)
h1	8.00	initial height of water above base of hole (m)
h2	7.55	final height of water above base of hole (m)
t	24.0	time of test (h)

k_s = 1.8E-08 cm/sec

Down To Earth Labs Inc.

The Science of Higher Yields

J. Lobbezoo Engineering + Consulting Services
Box 96
Monarch, Alberta T0L 1M0

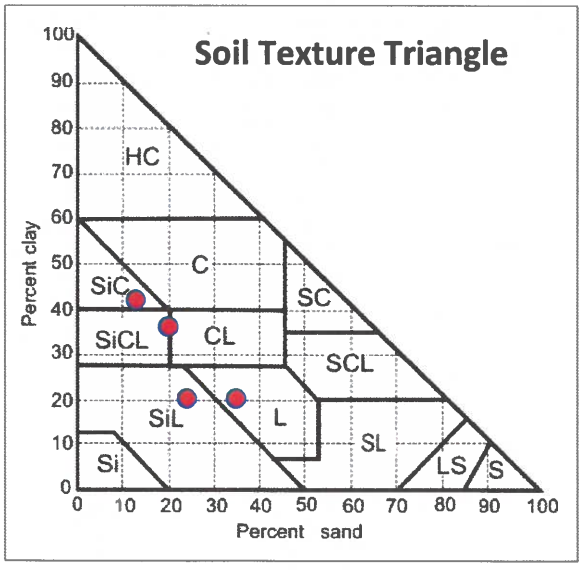
Report #: 201894
Report Date: 2025-01-13
Received: 2025-01-09
Completed: 2025-01-13
Test Done: ST

Project : Jumbo Colony

PO:

3510 6th Ave North
Lethbridge, AB T1H 5C3
403-328-1133
www.downtoearthlabs.com
info@downtoearthlabs.com

Sample ID:		250109O002	250109O003	250109O004	250109O005
Cust. Sample ID:		JC1-24	JC2-24	JC3-24	JC4-24
Analyte	**Units**	4.5-6	6-7.5	4.5-6	6.8-7.5
Sand	%	24.1	20.1	13.0	35.0
Silt	%	55.9	43.9	45.0	45.0
Clay	%	20.0	36.0	42.0	20.0
Soil Texture	-	Silt Loam	Clay Loam	Silty Clay	Loam



Raygan Boyce - Chemist

CHILAKO DRILLING SERVICES LTD

Box 942 Coaldale, Alberta, T1M 1M8
(403) 345-3710

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: NW28-10-25W4, Jumbo Valley Date: 11-Dec-24

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
JC1-24	0332365	0-0.15	CL	D	Topsoil		
	5525200	0.15-0.6	FSCL	D	Lac/Fluv		
		0.6-1.5	FSL	D	Lac/Fluv		Some gravel
		1.5-2.6	CL	D	Lac/Fluv		Some gravel
		2.6-7.4	SilS/MS	D	Bedrock	4.5-6.0	Soft siltstone/mudstone, gray
							50mm H.C. Well installed to 7.4m BGS
	~2m above bottom of lagoon						Screen: 7.4-4.4m
							Sand: 7.4-4.3m
							Bentonite: 4.3-0.0m
							Stickup: 0.6m
							Hole Diameter: 0.15m
JC2-24	0332368	0-0.15	FSCL	D	Topsoil		
	5525296	0.15-2.7	FSCL	D	Lac/Fluv		Trace gravel
		2.7-12.0	SilS/MS	D	Bedrock	6.0-7.5	Soft siltstone/mudstone, gray
	~3m above bottom of lagoon						
JC3-24	0332228	0-0.15	CL	D	Topsoil		
	5525331	0.15-1.5	SiC	D	Lac		V. Stiff, med plastic, brown
		1.5-2.5	CL-C	M	Till	1.5-2.5	V. Stiff, med plastic, dark brown
		2.5-3.0	FSL-FSCL	Sat	Till	2.5-3.0	Sat on top of bedrock
		3.0-12.0	SilS/MS	D	Bedrock	4.5-6.0	Soft siltstone/mudstone, gray
	~1m above bottom of lagoon						
JC4-24	0332212	0-3.6	CL-C	M	Fill		
	5525181	3.6-4.6	C	M	Fill		
	Between	4.6-5.2	CL	VM	Till		Stiff, med plastic, brown
	Lagoon	5.2-6.0	FSL-FSCL	Sat	Till		Soft, free water
	Cells	6.0-6.8	CL	M	Till		Stiff, low plastic, trace gravel, some sand
		6.8-9.2	SilS/MS	D	Bedrock	6.8-7.5	Soft siltstone/mudstone, gray
	Native material removed and clay liner installed below bottom of lagoon						
	No visible lagoon seepage						

Legend:

L	Loam
C	Clay
S	Sand
Gr.	Gravel
Si	Silt
F	Fine (sand)
VF	Very Fine (sand)

Eg. VFSCL = Very Fine Sandy Clay Loam

LIQUID MANURE COLLECTION AND/OR STORAGE: In-barn - Concrete liner

*(complete a copy of this section for **EACH** proposed in-barn liquid manure storage facility with a concrete liner)*

Facility description / name *(as indicated on site plan)*

1. Dairy barn 1
2. Dairy barn 2
3. Sand lane/Sand storage + Pit

Manure storage capacity *(use one row in the table for **EACH** in-barn storage. Attach additional pages if you require more rows)*

	Length (~~m~~ Feet)	Width (~~m~~ Feet)	Total depth (~~m~~ Feet)	Depth below ground level (m)	**NRCB USE ONLY** Calculated storage capacity (m^3)
1.	285.4	210			
2.	~~6~~ 260	110			
3.	257	70	12		
				TOTAL CAPACITY	

Concrete liner details

Scrape alleys or unslatted portions of barn floors (if applicable)	Concrete thickness: 8 inch	Method of sulphate protection: Type 50	
	Concrete strength: 32 mpa	Concrete reinforcement size and spacing: 10 mm 16" o/c	
In-barn manure pit floors	Concrete thickness: 8 inch	Method of sulphate protection: Type 50	
	Concrete strength: 32 mpa	Concrete reinforcement size and spacing: 10mm 16" o/c	
In-barn manure pit walls	Concrete thickness: 8 inch	Method of sulphate protection: Type 50	
	Concrete strength: 32 mpa	Horizontal reinforcement size and spacing: 10mm 16" o/c	Vertical reinforcement size and spacing: 10mm 16" o/c

LIQUID MANURE COLLECTION AND/OR STORAGE: In-barn - Concrete liner (cont.)

Describe how the joints at the junction of the pit walls, pit floors and any other joints will be sealed

Double water stop

Describe sealing practices for piping, etc. that penetrates the liner

silkaflex

Concrete requirements can be found in Technical Guideline Agdex 096-93
Guideline minimums:
Solid manure (wet): 30MPa (C)
Liquid manure: 32MPa (B)
Category A is required to be engineered
Method of sulphate protection:
Type 50 or Type 10 with fly ash or equivalent

NRCB USE ONLY

Requirements met: ☐ YES ☐ NO

Condition required: ☐ YES ☐ NO

Additional information

NRCB USE ONLY

Liquid manure storage volume calculator attached: ☐ YES ☐ NO

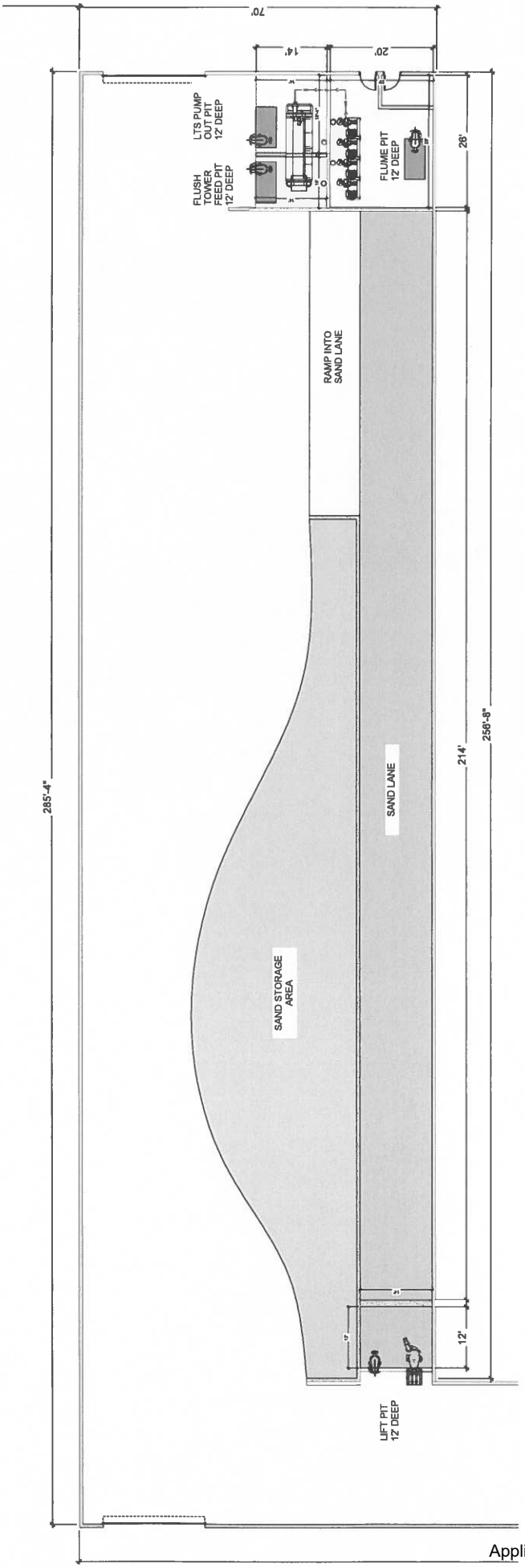
Depth to water table: _____ Requirements met: ☐ YES ☐ NO

Depth to uppermost groundwater resource: _____ Requirements met: ☐ YES ☐ NO

ERST completed: ☐ see ERST page for details

Concrete liner requirements

Leakage detection system required: ☐ YES ☐ NO If yes, please explain why


70'
14'
20'
LTS PUMP OUT PIT 12' DEEP
FLUSH TOWER FEED PIT 12' DEEP
FLUME PIT 12' DEEP
26'
RAMP INTO SAND LANE
SAND LANE
SAND STORAGE AREA
214'
256'-8"
285'-4"
12'
LIFT PIT 12' DEEP

Sand lain

Part 1

Part 2