



## Part 2 — Technical Requirements

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

<b>NRCB USE ONLY</b>	Application number	Legal land description
<input checked="" type="checkbox"/> Approval <input type="checkbox"/> Registration <input type="checkbox"/> Authorization <input type="checkbox"/> Amendment	<u>LA25034</u>	<u>SW 35-8-19 W4M</u>


### 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.

May 2 / 2025  
Date of signing  
Vida Farms Ltd  
Corporate name (if applicable)

  
Signature  
Wayne Karpant  
Print name

### GENERAL INFORMATION REQUIREMENTS

<b>Proposed facilities:</b> 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)
New lagoon	64m, 45m, <del>6m</del> 7m deep
Finishing Barn	74m, 25m
fill in old lagoon.	45m, 20m, 6m

<b>Existing facilities:</b> list ALL existing confined feeding operation facilities and their dimensions		
Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Sow barn / Nursery	40' 12m x 90m	
farrowing	16m x 21.5m	
farrowing / grower	16m x 80m	
<b>NRCB USE ONLY</b>		



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

Last updated September 11, 2023



## Part 2 — Technical Requirements

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

If a new facility is replacing an old facility, please explain what will happen to the old facility and when.

☒ N/A

Old facility filled in with clay and barn constructed on top. (old facility is lagoon)

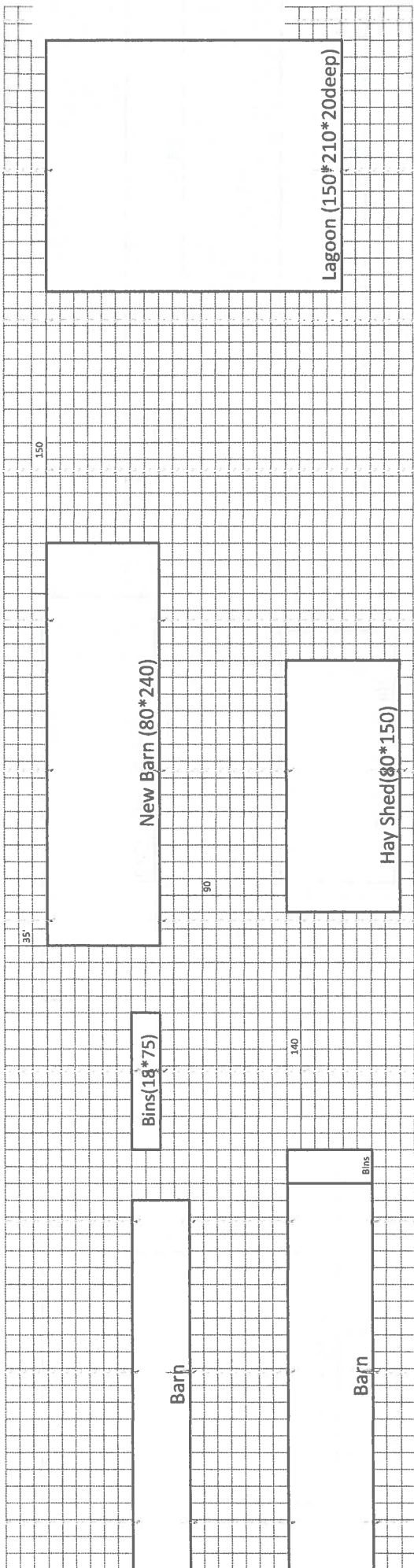
Construction completion date for proposed facilities June 2026

### 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





↑ N



Google Earth

Image © 2025 Airbus



700 m Application LA25034 Page 5 of 19



## 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 Protected Areas (EPA) 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 EPA 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 EPA'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 EPA 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 EPA'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.
7. **Provide:** Water licence application number(s) \_\_\_\_\_

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 EPA under the *Water Act* for the development or activity proposed in this AOPA application.
2. **Provide:** Water license number(s) or water conveyance agreement details \_\_\_\_\_

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)

### **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 EPA 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** EPA'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 EPA 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 EPA'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.
7. **Provide:** Water license number(s) or water conveyance agreement details SMRID # 135616

Signed this 28 day of April, 2025.

\_\_\_\_\_  
Signature of Applicant or Agent

## Part 2 — Technical Requirements

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: Sew / Fertilizing barns

Proposed 1: Finishing 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 elevation of the floor of the lowest manure storage or collection facility above the 1:25 year flood plain or the highest known flood level?	<input checked="" type="checkbox"/> > 1 m <input type="checkbox"/> ≤ 1 m	<input checked="" type="checkbox"/> > 1 m <input type="checkbox"/> ≤ 1 m	<input checked="" type="checkbox"/> > 1 m <input type="checkbox"/> ≤ 1 m	<input type="checkbox"/> > 1 m <input type="checkbox"/> ≤ 1 m	<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	
	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0	0		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	
Surface water information	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0	0		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> 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)	1 mile	1 mile	1 mile		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	
Groundwater information	What is the depth to the water table?		9m	9m		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	
	What is the depth to the groundwater resource/aquifer you draw water from?		9m	9m		<input type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> YES with exemption	

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



## Part 2 — Technical Requirements

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

Neighbour name(s)	Legal land description	Distance (m)	NRCB USE ONLY				
			Zoning (LUB) category	MDS category (1-4)	Distance (m)	Waiver attached (if required)	Meets regulations
1 Vanden Pol	SE 34-8-19-24	360					
2 New owner	NW 35-8-19-24	800					
3 Ober	SE 35-8-19-44	1000					

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

Name of land owner(s)*	Legal land description	Usable area** (ha)	Soil zone ***	NRCB USE ONLY	
				Usable area (ha)	Agreement attached (if required)
Kampert Farms	SW 35-8-19-24	56 140	irrigated		
Kampert Farms	NW 35-8-19-24	61 155	irrigated		
Kampert Farms	SE 3-9-19-24	60 155	irrigated		
Vito Farms	SW 24-8-19-24	60 150	irrigated		
<del>B &amp; V Ventures</del>	<del>SW 2-9-19-24</del>	<del>55</del>	<del>irrigated</del>		
<del>Kampert Farms</del>	<del>SE 10-9-19-24</del>				
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)**

For Yard #1

## Minimum Distance Separation (MDS) Waiver (declaration)

### Residence owner(s) information

ALL Names on land title: POLDALE DAIRY FARM LTD

Legal land location of residence(s): SE 34-8-19

Telephone number(s)<sup>1</sup>: [REDACTED] Email address(es)<sup>1</sup>: [REDACTED]

Address(es)<sup>1</sup> and Postal code(s)<sup>1</sup>: Box 376 Coaldale T1M1M4

<sup>1</sup> Please note that personal contact information is for NRCB use ONLY and not publicly released

I am/we are the legal landowner(s) of a residence(s) located at the above noted legal land location/address:

- I/we have read the NRCB Fact Sheet "Minimum Distance Separation (MDS) Waivers";
- I/we have discussed this application with the applicant and understand its potential impacts to our residence(s);
- I/we understand that the application **does not** meet the MDS requirement to my/our residence(s), under the *Agricultural Operation Practices Act* (AOPA);
- **I/we understand that this waiver is not valid unless signed by ALL parties identified on the land title as owners;**
- **I/we are not obligated to waive the MDS requirement to our residence(s);**
- I/we understand that if I/we choose to waive the MDS requirement, I/we can revoke the waiver, by providing written notice to the NRCB approval officer, as set out in the "Minimum Distance Separation (MDS) Waivers" Fact Sheet; and
- I/we understand that this waiver is a public document.

Having considered my/our rights, I/we hereby waive the MDS requirement to my/our residence, with respect to

Application number LA 25034

Gys Van der Pol  
Printed names of all residence owner(s) on title

Date: April 30 2025

## Minimum Distance Separation (MDS) Waiver (declaration)

### Applicant information

NRCB application number: \_\_\_\_\_

Operator/operation name: Vita Farms Ltd

Address: Po Box 671 Coaldale, AB Postal Code: T1M 1M6

Legal land location of confined feeding operation: SW 35-8-19-W4

I have requested the residence owner(s) named below to waive the required minimum distance separation (MDS) to their residence for the *Agricultural Operation Practices Act* (AOPA) permit application identified above. In making this request, I have provided the owner(s) with an opportunity to review my permit application and a copy of the Natural Resources Conservation Board (NRCB) Fact Sheet "Minimum Distance Separation (MDS) Waivers" available on the NRCB website at [www.nrcb.ca](http://www.nrcb.ca). I have also explained:

- The MDS requirement set out in section 3 of the Standards and Administration Regulation of AOPA. I have advised the owner(s) that section 3(6)(a) of the Standards and Administration Regulation allows this requirement to be waived by the owners of residences, if they agree in writing to grant a waiver;
- That my proposed development does not meet the required MDS to the owner's residence; and,
- That this waiver applies only to this application as described. An increase in livestock capacity, annual manure production, level of odour production, change to the site plan or change to a facility that would increase the MDS would require a new waiver.

Following is a summary of the proposed development:

- The current scope of my confined feeding operation (CFO), including the type, number, and category of livestock, if any, is:

200 sows farrow to finish

- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:

400 sows farrow to finish

- The proposed new CFO facility(ies), or changes to the existing CFO facilities, including manure storage, manure storage volume and any other pertinent details, if any, are (attach a site layout plan if available):

New leagoon

New finishing barn

**I the applicant understand that the waiver is not valid unless ALL registered owners of the residence sign this document.**

Permit Applicant: \_\_\_\_\_

Date: April 30 / 2025

Residence owner(s) to initial: \_\_\_\_\_





## Part 2 — Technical Requirements

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

### 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. Finishing barn
2. \_\_\_\_\_
3. \_\_\_\_\_

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

	Length (m)	Width (m)	Total depth (m)	Depth below ground level (m)	<b>NRCB USE ONLY</b> Calculated storage capacity (m <sup>3</sup> )
1.	74	25	1.3	1	
2.					
3.					
TOTAL CAPACITY					

#### Concrete liner details

Scrape alleys or unlatted portions of barn floors (if applicable) <u>NA</u>	Concrete thickness <u>8 inch</u>		Method of sulphate protection <u>Type 50 cement</u>	
	Concrete strength <u>32 MPa</u>		Concrete reinforcement size and spacing <u>16" on center</u>	
In-barn manure pit floors	Concrete thickness <u>6"</u>		Method of sulphate protection <u>Type 50 cement</u>	
	Concrete strength <u>32 MPa</u>		Concrete reinforcement size and spacing <u>16" on center</u>	
In-barn manure pit walls	Concrete thickness <u>6"</u>		Method of sulphate protection <u>Type 50 cement</u>	
	Concrete strength <u>32 MPa</u>	Horizontal reinforcement size and spacing <u>16" on center</u>	Vertical reinforcement size and spacing <u>16" on center</u>	



## Part 2 — Technical Requirements

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

### 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

Water stop

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

Water stop

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





## Part 2 — Technical Requirements

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. Nar 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 <sup>3</sup> ) (excl. 0.5 m freeboard)	Filled in lower 1/4? Y/N
1.	64	45	7	6	3	3	4		
2.									
TOTAL CAPACITY									

#### Surface water control systems

Describe the run-on and runoff control system

1m berm to prevent runoff entering lagoon.

#### Naturally occurring protective layer details

chilaka John Lopezoo ± 10m

Thickness of naturally occurring protective layer	_____ (m)	Provide details (as required)		
		See attached report		
Soil texture	_____ % sand	_____ % silt	_____ % clay	
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested	Hydraulic conductivity (cm/s)	Describe test standard used	

Additional information (attach copies of soil test reports)

#### NRCB USE ONLY

Requirements met: ☐ YES ☐ NO  
Condition required: ☐ YES ☐ NO  
Report attached: ☐ YES ☐ NO



28 March 2025

**J Lobbezoo Engineering & Consulting Services Ltd.**

PO Box 96, Monarch, AB T0L1M0

JLECS File: P25022

**Vita Farms Ltd.**

PO Box 671

Coaldale, Alberta T1M 1M6

Attention: Mr. Wayne Kampert

**Re: Geotechnical Review and Evaluation  
NRCB Permitting of Proposed Manure Storage Lagoon  
SW-35-008-19-W4M, near Coaldale, 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 a proposed lagoon at the east side of the existing farmyard at the above captioned site (refer to Figure 1, attached).

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 March 10, 2025. The boreholes were advanced at the approximate locations denoted as VF1-25 to VF4-25 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 9.2 m to 15.4 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 minor lacustrine clay and silty clay overlying stiff, medium plastic clay till. Minor sand lensing and saturated sandy soil was observed below about 9 m depth in boreholes VF1-25 to VF3-25. While groundwater (seepage) was identified in the boreholes below about 9 m depth, no groundwater resource (as defined by the AOPA) was encountered within the upper 9.0 m at this site.

Samples of soil collected from the screened zones of borehole VF4-25, 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**

<b>Borehole/Depth</b>	<b>% Sand</b>	<b>% Silt</b>	<b>% Clay</b>
VF1-24 / 9.5 – 10.5 m	46	28	26
VF2-24 / 8.0 – 9.0 m	45	29	26
VF3-24 / 8.0 – 9.0m	44	31	25
VF4-24 / 8.0 – 9.0m	42	32	26
<i>Average:</i>	44	30	26

To measure the *in situ* permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in borehole VF4-25. The test well was screened from 6.0 m to 9.2 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 three days of testing, a 24-hour water drop of 1.93 m was determined.

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 reports. The results of the permeability testing indicated an *in situ* hydraulic conductivity ( $k_s$ ) of  $6.7 \times 10^{-8}$  cm/s at VF4-25.

Using the measured permeability of the clay at this site, the 3.2 m of clay screened at test hole VF4-25 is estimated to represent the equivalent of about 48 m of naturally occurring materials having a hydraulic conductivity of  $1 \times 10^{-6}$  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).

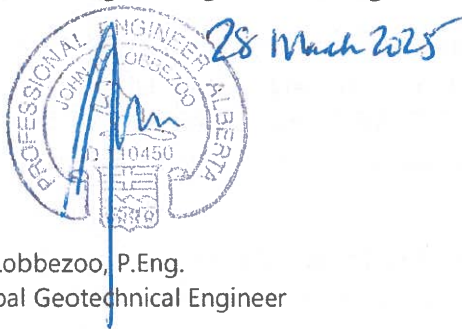
### Conclusion

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 proposed lagoon at this location.


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.**



John Lobbezoo, P.Eng.  
Principal Geotechnical Engineer

<b>PERMIT TO PRACTICE</b> <b>J LOBBEZOO ENGINEERING &amp; CONSULTING SERVICES LTD.</b>	
RM SIGNATURE:	
RM APEGA ID #:	110450
DATE:	28 March 2025
<b>PERMIT NUMBER: P016456</b> 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**

Image Credit: Google



VF4-25

## 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)

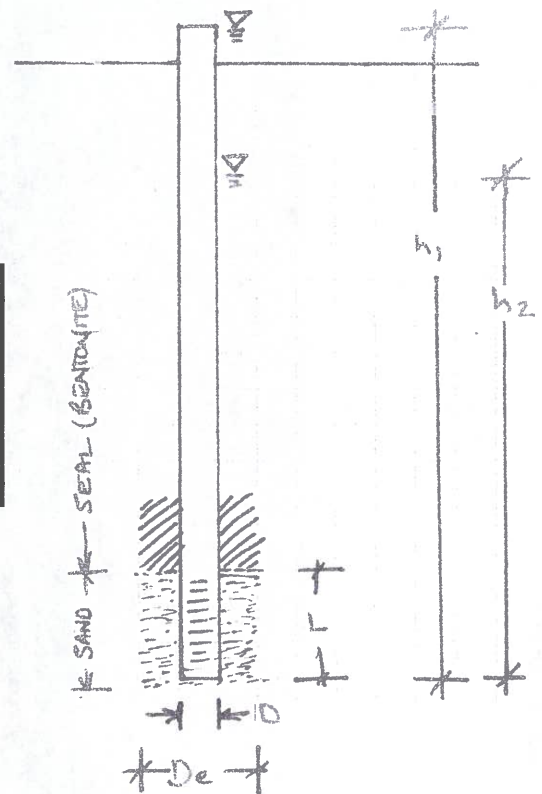
VF4-25 - Vita Farms Ltd.

JLECS File: P25022

**INPUT VARIABLES**

Terms	Value	Definition
D	0.0520	diameter of standpipe (m)
De	0.1500	diameter of borehole (m)
L	3.20	length of sand section (m)
h1	9.80	initial height of water above base of hole (m)
h2	7.87	final height of water above base of hole (m)
t	24.0	time of test (h)

$$k_s = 6.7E-08 \text{ cm/sec}$$



# CHILAKO DRILLING SERVICES LTD

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

## SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: SW35-8-19W4, Vita Farms

Date: 10-Mar-25

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
VF1-25	0393303 5505299	0-0.15	CL	M	Topsoil		
		0.15-0.7	SiCL	M	Lac		
		0.7-3.2	CL	M	Till		Stiff, med plastic, brown, a few pebbles
		3.2-6.4	CL-C	M	Till		Stiff, med plastic, yellow brown, oxidized
		6.4-11.0	C	SM	Till	9.5-10.5	Stiff, med plastic, brown, gray mottling, oxidized
		11.0-12.5	C	SM	Till		V stiff, med plastic, gray, oxidized
		11.0					Free water
		12.5-13.5	CL-SCL	Sat	Till	12.5-13.0	Low plastic, olive brown
VF2-25	0393304 5505340	13.5-15.4	C	M	Till		Stiff, med plastic, brown
		0-0.15	CL	M	Topsoil		
		0.15-0.7	SiCL	M	Lac		
		0.7-2.6	CL	M	Till		Stiff, med plastic, brown
		2.6-4.5	CL-C	M	Till		Stiff, med plastic, brown
		4.5-6.2	CL-C	M	Till		Stiff, med plastic, yellow brown
		6.2-11.0	CL-C	SM	Till	8.0-9.0	Stiff, med plastic, brown, gray mottling, oxidized
		9.0	S	Sat			Sat sand lens
VF3-25	0393259 5505341	11.0-11.5	CL-SCL	M	Till		
		11.5-15.0	C	M	Till	11.5-13.0	Stiff, med plastic, gray, oxidized
		0-0.15	CL	D	Topsoil		
		0.15-0.7	SiCL	D	Lac		
		0.7-2.4	CL	M	Till		Stiff, med plastic, brown
		2.4-5.0	CL-C	M	Till		Stiff, med plastic, brown
		5.0-7.2	CL-C	M	Till		Stiff, med plastic, brown, oxidized
		7.2-9.0	C	M	Till	8.0-9.0	Stiff, med plastic, yellow brown
VF4-25	0393254 5505296	9.0-9.1	SL	M	Till		Sand pocket
		9.1-10.6	C	M	Till		Stiff, med plastic, dark brown, gray mottles oxidized
		10.6-12.4	C	M	Till		Stiff, med plastic, dark brown, gray mottles
		12.4-15.0	C	M	Till		Sat sand lensing, free water @ 10.6m
		0-0.15	CL	M	Topsoil		
		0.15-0.7	SiCL	M	Lac		
		0.7-3.0	CL	M	Till		Stiff, med plastic, brown
		3.0-6.0	CL	M	Till		Stiff, med plastic, yellow brown
		6.0-9.2	CL-C	M	Till	8.0-9.0	Stiff, med plastic, brown, oxidized
							50mm H.C. well installed to 9.2m BGS
							Screen: 9.2-6.2m
							Sand: 9.2-6.0m
							Bentonite: 6.0-0.0m
							Stickup: 0.6m
							Hole Diameter: 0.15m

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

Eg. VFSCCL = Very Fine Sandy Clay Loam