

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)

NRCB USE ONLY Application number

Legal land description

☒ Approval ☐ Registration ☐ Authorization
☐ Amendment

LA25032

NE 14-10-16 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.

18-3-25

Date of signing

Hummel Holsteins Ltd

Corporate name (if applicable)

Signature

Albert Hummel

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)
extension dairy barn	268' L x W 132'
transfer pit	12' W x 140' L x 8' D
auxiliary building	80' L x 40' W

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

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
255' x 105' existing	255 x 105	
8300 m ³ slurry storage		

NRCB USE ONLY

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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

Construction completion date for proposed facilities _____

Additional information

phase 1 finish spring (march) 2020 → east side including transfer
phase 2 finish spring (march) 2031 → west side

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
Dairy	140	160 103	300 243
(plus associated dries and replacements)			
AO Comment: Livestock numbers have not changed from Part 1 application.			

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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 ____ day of _____, 20____.

Signature of Applicant or Agent

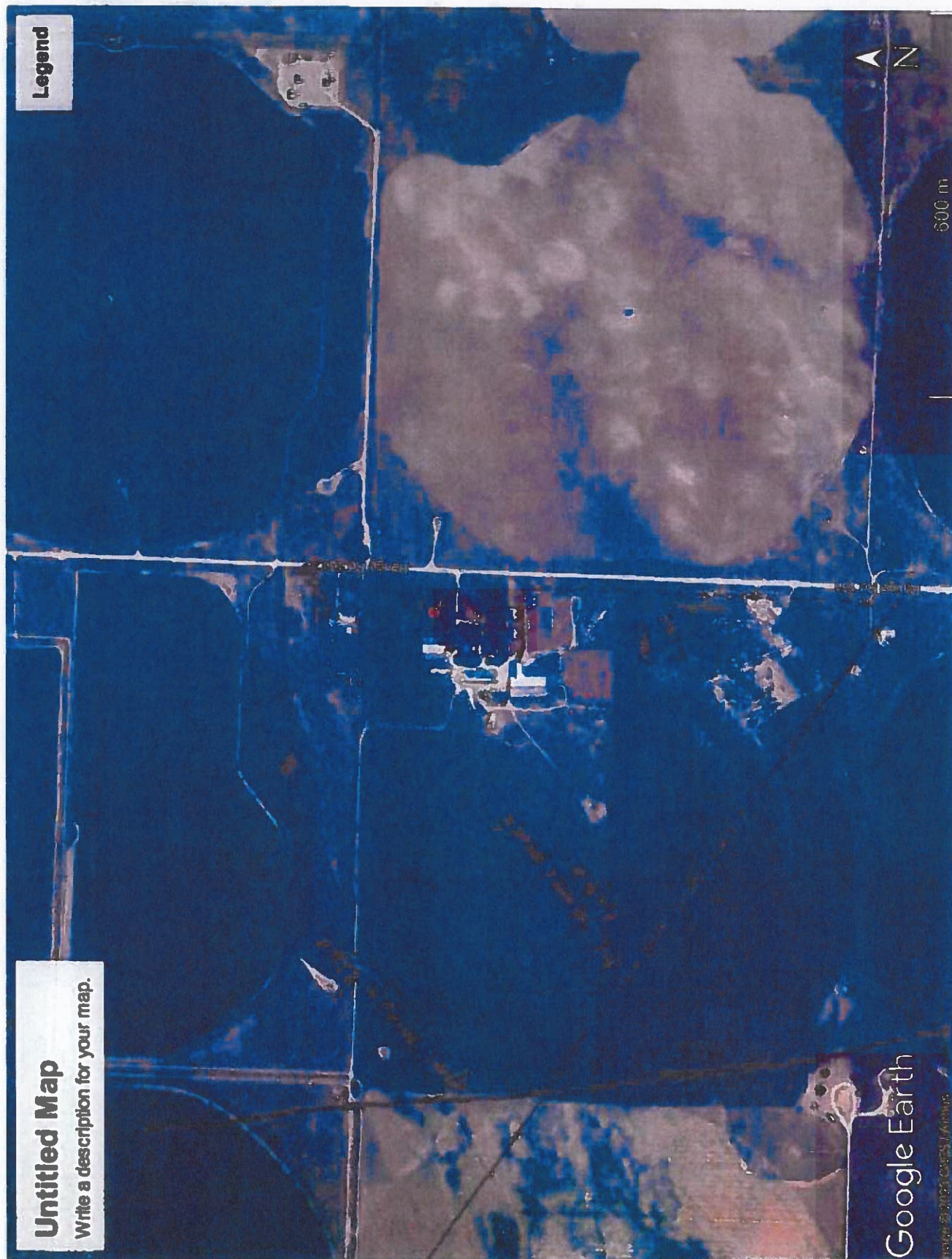
OPTION 4: Uncertain if Water Act licence is needed: acknowledgement of risk (for existing CFOs only)

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 10 day of March, 2025

Agent





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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: slurry storage

Proposed 1: Dairy barn expansion

Proposed 2: _____

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?	n/a	n/a			☐ YES ☐ NO ☐ YES with exemption	
Surface water information How many water wells are within 100 m of the manure storage facility or manure collection area?	n/a	n/a			☐ YES ☐ NO ☐ YES with exemption	
Surface water information What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	500m	n/a			☐ YES ☐ NO ☐ YES with exemption	
Groundwater information What is the depth to the water table?		3.6 m			☐ YES ☐ NO ☐ YES with exemption	
Groundwater information What is the depth to the groundwater resource/aquifer you draw water from?	n/a	n/a			☐ YES ☐ NO ☐ YES with exemption	

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

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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)	Meets regulations
Cook	SE 32-10-16	± 260				

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)
NE 14-10-16	hummel	120			
NW 14-10-16	hummel	140			
SW 14-10-16	hummel	150			
NW 16-10-16	hummel	75			
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)

Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information

NRCB application number: _____

Operator/operation name:

Hummel Holsteins Ltd

Address:

box 4014 Taber

Postal Code:

T1G 2C6

Legal land location of confined feeding operation:

NE 14-10-16 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. 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:

140 milking cows

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

300 milking cows

- 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):

✓

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

Permit Applicant:

[Redacted Signature]

Date:

31-3-25

Signature

Residence owner(s) to initial:

Dorise Cook

Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title:

Denise Cook.

Legal land location of residence(s):

SE 23 10 16 W4

Telephone number(s)¹

Email address(es)¹

Address(es)¹ and Postal code(s)¹:

Box 4345 Tular, AB T1G 2C7

¹ 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 _____

Signatures of all residence owner(s) on title

Denise Cook.

Printed names of all residence owner(s) on title

Date:

March 31, 2025

Manure Spreading Agreement

This agreement is between Hummel Holsteins Ltd, manure producer, and
Leroy Holthe manure receiver.

Length of agreement: This agreement is valid for a time period of
(minimum of one year)

Legal land location	Soil type ¹	Acres suitable for manure spreading ²
SE 23-10-16 W4	irrigated	60

¹ Soil type choices: Dark brown and brown, Grey wooded, Black, Irrigated.

² Land within required setbacks from water bodies, water wells, residences, etc. is not to be included.

Other comments:

Manure producer (Confined Feeding Operation) Legal Land Location_____

10-3-25

Date of signing



Signature

Albert Hummel

Print name

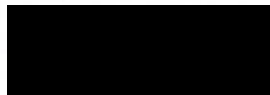
Hummel Holsteins Ltd

Corporate name(if appl)

Manure Receiver – Landowner(s)³

10-3-25

Date of signing



Signature

Leroy HOLTHE

Print name

Corporate name(if appl)

Date of signing

Signature

Print name

Corporate name(if appl)

³ All registered owners of land, or authorized signing authorities must sign.

Name [REDACTED]
Address [REDACTED]
Legal Land [REDACTED]
Location [REDACTED]

MDS Spreadsheet based on 2006 AOPA Regulations

Category of Livestock	Type of Livestock	Factor A	Technology Factor	MU	LSU Factor	LSU
Feedlot Animals	Beef Cows/Finishers (900+ lbs)	0.700	0.700	0.910	0.4458	-
	Beef Feeders (450 - 900 lbs)	0.700	0.700	0.500	0.2450	-
	Beef Feeder Calves (<550 lbs)	0.700	0.700	0.275	0.1348	-
	Horses - PMU	0.650	0.700	1.000	0.4550	-
	Horses - Feeders > 750 lbs	0.650	0.700	1.000	0.4550	-
	Horses - Foals < 750 lbs	0.650	0.700	0.300	0.1385	-
	Mules	0.800	0.700	1.000	0.4200	-
	Donkeys	0.800	0.700	0.670	0.2814	-
	Bison	0.600	0.700	1.000	0.4200	-
						-
Dairy ('count lactating cows only)	Free Stall - Lactating Cows with all associated dries, heifers, and calves	0.800	1.100	2.000	1.7600	427.7
	Free Stall - Lactating Cows with Dry Cows only	0.800	1.100	1.640	1.4432	-
	Free Stall - Lactating Cows only	0.800	1.100	1.400	1.2320	-
	Tie Stall - Lactating Cows only	0.800	1.000	1.400	1.1200	-
	Loose Housing - Lactating Cows only	0.800	1.000	1.400	1.1200	-
	Dry Cow	0.800	0.700	1.000	0.5600	-
	Replacements - Bred Heifers (Breeding to Calving)	0.800	0.700	0.875	0.4900	-
	Replacements - Growing Heifers (350 lbs to breeding)	0.800	0.700	0.525	0.2940	-
	Calves (< 350 lbs)	0.800	0.700	0.200	0.1120	-
						-
Swine Liquid ('count sows only)	Farrow to finish *	2.000	1.100	1.780	3.9160	-
	Farrow to wean *	2.000	1.100	0.670	1.4740	-
	Farrow only *	2.000	1.100	0.530	1.1660	-
	Feeders/Boars	2.000	1.100	0.200	0.4400	-
	Growers/Roasters	2.000	1.100	0.118	0.2600	-
	Weaners	2.000	1.100	0.055	0.1210	-
						-
Swine Solid ('Count sows only)	Farrow to finish *	2.000	0.800	1.780	2.8480	-
	Farrow to wean *	2.000	0.800	0.670	1.0720	-
	Farrow only *	2.000	0.800	0.530	0.8480	-
	Feeders/Boars	2.000	0.800	0.200	0.3200	-
	Growers/Roasters	2.000	0.800	0.118	0.1888	-
	Weaners	2.000	0.800	0.055	0.0880	-
						-
Poultry	Chicken - Breeders - Solid	1.000	0.700	0.010	0.0070	-
	Chicken - Layers - Liquid (includes associated pullets)	2.000	1.100	0.008	0.0176	-
	Chicken - Layers - (Belt Cage)	2.000	0.700	0.008	0.0112	-
	Chicken - Layers - (Deep Pit)	2.000	0.700	0.008	0.0112	-
	Chicken - Pullets/Broilers	1.000	0.700	0.002	0.0014	-
	Turkey - Toms/Breeders	1.000	0.700	0.020	0.0140	-
	Turkey - Hens (light)	1.000	0.700	0.013	0.0091	-
	Turkey - Broilers	1.000	0.700	0.010	0.0070	-
	Ducks	1.000	0.700	0.010	0.0070	-
	Geese	1.000	0.700	0.020	0.0140	-
Sheep and Goats	Sheep - Ewes/Rams	0.600	0.700	0.200	0.0840	-
	Sheep - Ewes with lambs	0.600	0.700	0.250	0.1050	-
	Sheep - Lambs	0.600	0.700	0.050	0.0210	-
	Sheep - Feeders	0.600	0.700	0.100	0.0420	-
	Goats - Meat/Milk (per Ewe)	0.700	0.700	0.170	0.0833	-
	Goats - Nannies/Bdies	0.700	0.700	0.140	0.0686	-
	Goats - Feeders	0.700	0.700	0.077	0.0377	-
Cervid	Elk	0.600	0.700	0.600	0.2520	-
	Deer	0.600	0.700	0.200	0.0840	-
Wild Boar	Feeders	2.000	0.800	0.140	0.2240	-
	Sow (farrowing)	2.000	0.800	0.371	0.5936	-

Total 427.7

For New Operations

Dispersion Factor

1

Category	Odour Objective	Distance	
		Feet	Metres
1	41.04	1,229	375
2	54.72	1,639	499
3	68.4	2,048	624
4	109.44	3,277	999

For Expanding Operations

Dispersion Factor

Expansion Factor

0.77

Category	Odour Objective	Distance	
		Feet	Metres
1	41.04	946	288
2	54.72	1,262	385
3	68.40	1,577	481
4	109.44	2,524	769

Name Hummel Holsteins Ltd
Address
Legal Land
Location NE 14-10-16 W4

0

Landbase Requirements (hectares) based on 2006 AOPA requirements

Category of Livestock	Type of Livestock	Number of Animals	Dark Brown & Brown (ha)	Grey Wooded (ha)	Black (ha)	Irrigated (ha)
Feedlot Animals	Cows/Finishers (900+ lbs)	0.0	0.0	0.0	0.0	0.0
	Feeders (450 - 900 lbs)	0.0	0.0	0.0	0.0	0.0
	Feeder Calves (<550 lbs)	0.0	0.0	0.0	0.0	0.0
	Horses - PMU	0.0	0.0	0.0	0.0	0.0
	Horses - Feeders > 750 lbs	0.0	0.0	0.0	0.0	0.0
	Horses - Foals < 750 lbs	0.0	0.0	0.0	0.0	0.0
	Mules	0.0	0.0	0.0	0.0	0.0
	Donkeys	0.0	0.0	0.0	0.0	0.0
	Bison	0.0	0.0	0.0	0.0	0.0
Dairy (*count lactating cows only)	Free Stall Lactating Cows with all associated dms, heifers, and calves	243.0	360.9	300.6	225.5	180.3
	Free Stall - Lactating Cows with Dry Cows only	0.0	0.0	0.0	0.0	0.0
	Free Stall - Lactating Cows only	0.0	0.0	0.0	0.0	0.0
	Tie Stall Lactating Cows only	0.0	0.0	0.0	0.0	0.0
	Loose Housing - Lactating Cows only	0.0	0.0	0.0	0.0	0.0
	Dry Cow (Solid manure)	0.0	0.0	0.0	0.0	0.0
	Dry Cow (Liquid manure)	0.0	0.0	0.0	0.0	0.0
	Replacements - Bred Heifers (Breeding to Calving)	0.0	0.0	0.0	0.0	0.0
	Replacements - Growing Heifers (350 lbs to breeding)	0.0	0.0	0.0	0.0	0.0
	Calves (< 350 lbs)	0.0	0.0	0.0	0.0	0.0
		0.0				
Swine Liquid (*count sows only)	Farrow to finish *	0.0	0.0	0.0	0.0	0.0
	Farrow to wean *	0.0	0.0	0.0	0.0	0.0
	Farrow only *	0.0	0.0	0.0	0.0	0.0
	Feeders/Boars	0.0	0.0	0.0	0.0	0.0
	Growers/Roasters	0.0	0.0	0.0	0.0	0.0
	Weaners	0.0	0.0	0.0	0.0	0.0
		0.0				
Swine Solid (*Count sows only)	Farrow to finish *	0.0	0.0	0.0	0.0	0.0
	Farrow to wean *	0.0	0.0	0.0	0.0	0.0
	Farrow only *	0.0	0.0	0.0	0.0	0.0
	Feeders/Boars	0.0	0.0	0.0	0.0	0.0
	Growers/Roasters	0.0	0.0	0.0	0.0	0.0
	Weaners	0.0	0.0	0.0	0.0	0.0
		0.0				
Poultry	Chicken - Breeders - Solid	0.0	0.0	0.0	0.0	0.0
	Chicken - Layers - Liquid (includes associated pullets)	0.0	0.0	0.0	0.0	0.0
	Chicken - Layers - (Bell Cage)	0.0	0.0	0.0	0.0	0.0
	Chicken - Layers - (Deep Pit)	0.0	0.0	0.0	0.0	0.0
	Chicken - Pullets/Broilers	0.0	0.0	0.0	0.0	0.0
	Turkey - Toms/Breeders	0.0	0.0	0.0	0.0	0.0
	Turkey - Hens (light)	0.0	0.0	0.0	0.0	0.0
	Turkey - Broilers	0.0	0.0	0.0	0.0	0.0
	Ducks	0.0	0.0	0.0	0.0	0.0
	Geese	0.0	0.0	0.0	0.0	0.0
		0.0				
Goats and Sheep	Sheep - Ewes/Rams	0.0	0.0	0.0	0.0	0.0
	Sheep - Ewes with lambs	0.0	0.0	0.0	0.0	0.0
	Sheep - Lambs	0.0	0.0	0.0	0.0	0.0
	Sheep - Feeders	0.0	0.0	0.0	0.0	0.0
	Goats - Meat/Milk (per Ewe)	0.0	0.0	0.0	0.0	0.0
	Goats - Nannies/Billies	0.0	0.0	0.0	0.0	0.0
	Goats - Feeders	0.0	0.0	0.0	0.0	0.0
Cervid	Elk	0.0	0.0	0.0	0.0	0.0
	Deer	0.0	0.0	0.0	0.0	0.0
Wild Boar		0.0				
	Feeders	0.0	0.0	0.0	0.0	0.0
	Sow (farrowing)	0.0	0.0	0.0	0.0	0.0
Total Hectares			361	300.6		
Total Acres			892	742.8		

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. extension dairy barn
2. transfer pit
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)	NRCB USE ONLY Calculated storage capacity (m ³)
1.	268'	140' 132'	n/a	n/a	
2.	140'	12'	8'	8'	
3.					
TOTAL CAPACITY					

Concrete liner details

Scrape alleys or unslatted portions of barn floors (if applicable)	Concrete thickness 15 cm		Method of sulphate protection type 50	
	Concrete strength 32 mpa		Concrete reinforcement size and spacing 10 mm 30 cm spacing 45	
In-barn manure pit floors	Concrete thickness 15		Method of sulphate protection type 50	
	Concrete strength 32 mpa		Concrete reinforcement size and spacing 15 cm 15mm R-bar	
In-barn manure pit walls	Concrete thickness 20 cm		Method of sulphate protection type 50	
	Concrete strength 32 mpa	Horizontal reinforcement size and spacing 60 cm 15mm	Vertical reinforcement size and spacing 60 cm 15mm	

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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 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

Vol clay OR sika flex on joints

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

no piping – gravity fed into storage pit

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

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Requirements met: ☐ YES ☐ NO

Condition required: ☐ YES ☐ NO

Additional information

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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

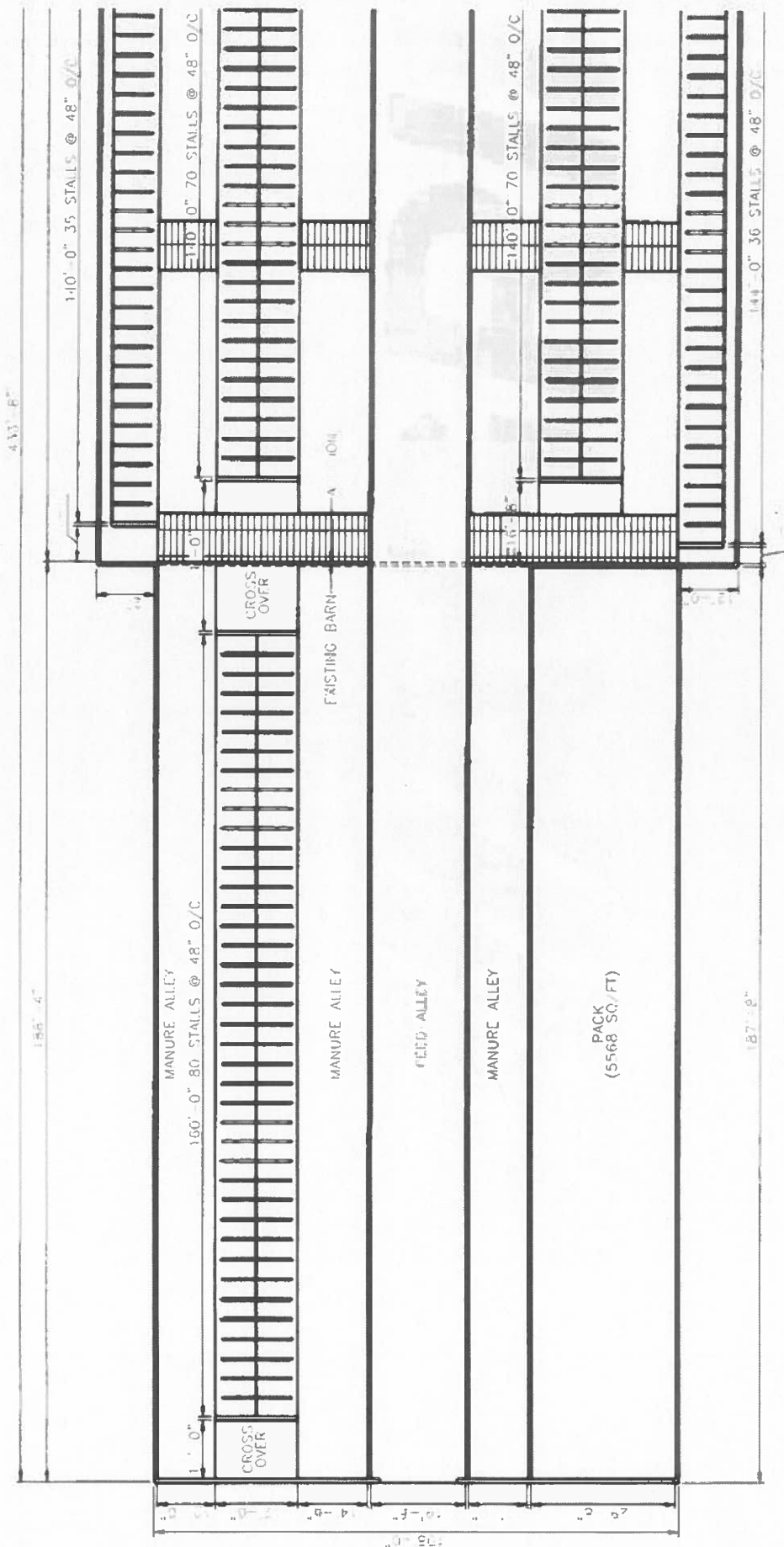
Leakage detection system required:

☐ YES ☐ NO If yes, please explain why

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PLAN VIEW

