

Technical Document LA25017

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 | Natural Resources
Conservation Board

NRCB USE ONLY

Application number

Legal land description

- ☒ Approval ☐ Registration ☐ Authorization
☐ Amendment

LA25017

NW 30-11-19 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.

April 15, 2025
Date of signing

Dogwood Poultry Farms Ltd.
Corporate name (if applicable)


Signature
Derek Hoschka
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)
Build new poultry barn #10	500' (L) x 50' (W) 152.4 m x 15.2 m
Build new poultry barn #11	500' (L) x 50' (W) 152.4 m x 15.2 m
Solid manure storage pad (June 23, 2025: confirmed with applicant via email that this is a proposed facility as it is included in the site map on page 5).	30.48 m x 76.51 m

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

Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
Barn #1	300' x 50'	
Barn #2	300' x 50'	
Barn #3	300' x 50'	

NRCB USE ONLY

Confirmed existing facilities

Part 2 – Technical Requirements



NRCB | Natural Resources
Conservation Board

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[illegible]

Part 2 – Technical Requirements



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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

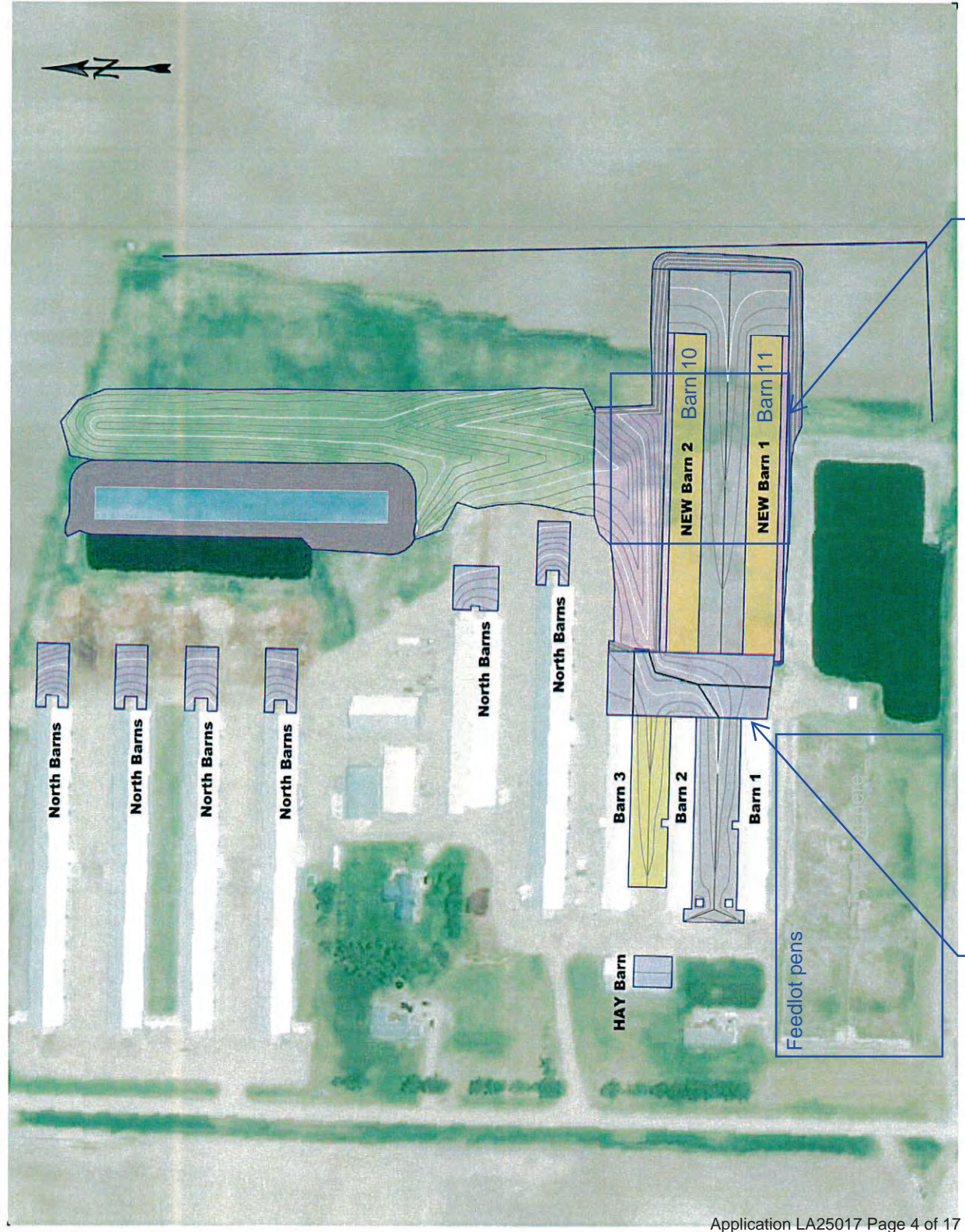
The broiler barns and solid manure storage pad will be built on a permitted solid manure storage pad

Construction completion date for proposed facilities July 2025

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
Broilers	380000 379,000	120000 -90,000	500000 479,000
Beef finishers	600		600 469,000
Applicant decreased proposed chicken broilers in the part 2 application. AO corrected the permitted number and the total number of chicken broilers.			



Dennis Dirtworx LTD			
Dogwood Scope			
Date	APR 2025	Drawn	Dan Dyck
Scale	NTS	Job #	25-142

Barns 10 & 11 will be built over the existing solid manure storage pads

Proposed solid manure storage pad between existing barns and proposed barns 10 & 11

Historically, barns labeled 3, 2, 1 on this site map have been called 3, 4, 5 or F,G,H respectively.

PLAN

SHOWING

PROPOSED

LOCATION OF TWO NEW BARNS

WITHIN

N.W. 1/4 SEC. 30, TWP. 11, RGE. 19, W4M

Lethbridge County

LEGEND

- STATUTORY IRON PISTONS FOUND ARE SHOWN THUS ● Fd. 1.
- DISTANCES ARE IN METRES AND DECIMALS THEREOF
- DATE OF FIELD SURVEY MARCH 7, 2023
- SEE ATTACHED DETAIL PLAN

- Fd. 1. STATUTORY IRON POST
- Fd. 2. STATUTORY IRON POST
- Fd. 3. STATUTORY IRON POST
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- Fd. 100. STATUTORY IRON POST

REVISIONS

NO.	DESCRIPTION	BY	DATE
1	ISSUED FOR REVIEW		
2	ISSUED FOR REVIEW		
3	ADD NOTE FOR MANURE PAD		
4	ADD NOTE FOR CLIENT INSTRUCTION		
5	ISSUED FOR REVIEW		

STAMP

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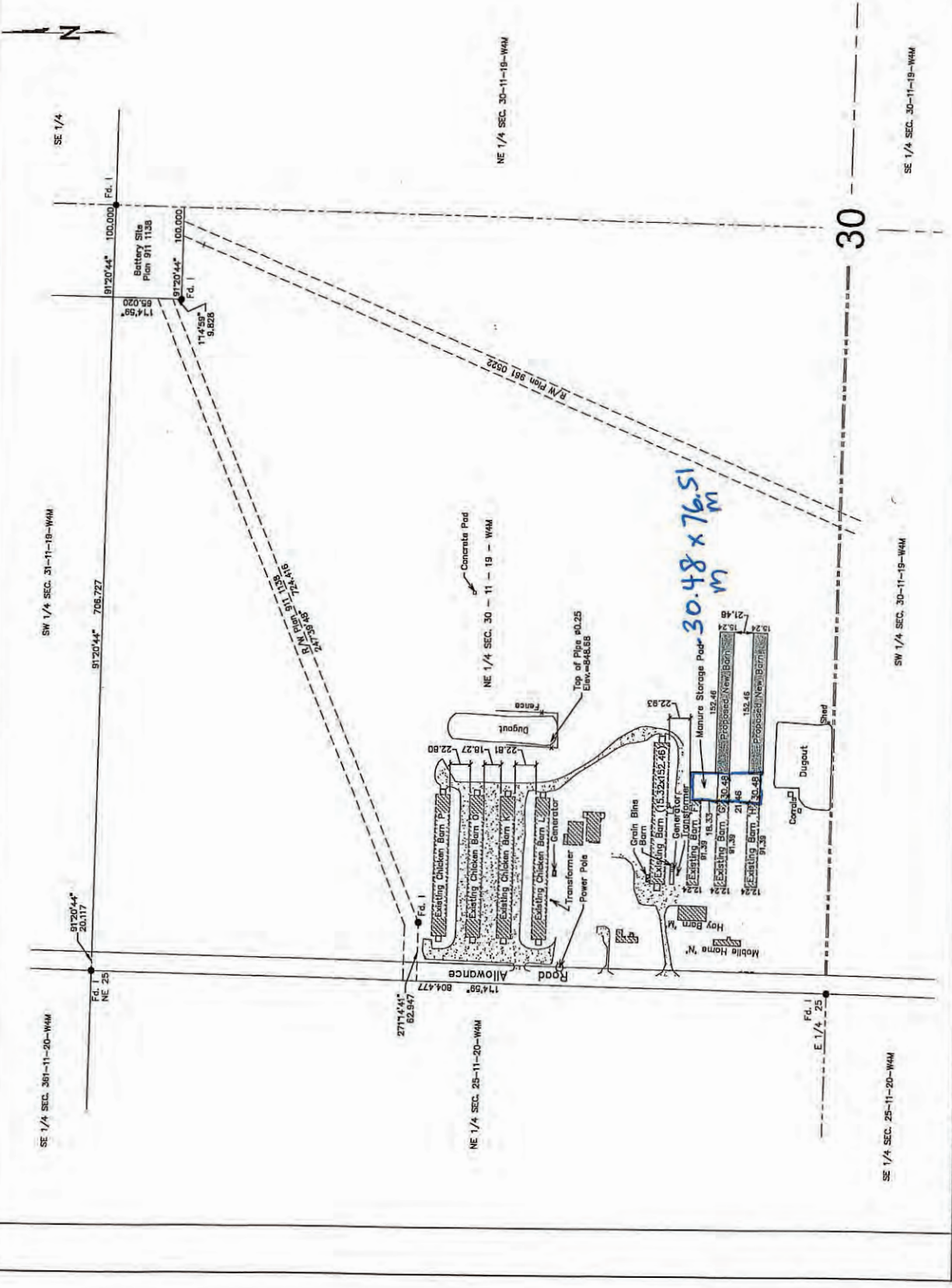
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MARTIN
GEOMATIC CONSULTANTS
CONSULTING ENGINEERS, PLANNERS, AND LAND SURVEYORS
255-2nd Street North, Lethbridge, Alberta T1K 2Z4
Ph: (403) 326-6500 Email: geomatic@martin.ca Fax: (403) 326-6504

SCALE: 1:4000
1:4000 METRES

DRAWN: SDP
DESIGN: SDP
OWNER: DOGWOOD POULTRY 2 LTD.
PROJECT: PROPOSED BARN DEVELOPMENT

TITLE: SITE PLAN

PROJECT NUMBER: 251281LS

DRAWING NUMBER: DWG 1

Part 2 – Technical Requirements

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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) WL-C3-19-11-30-61-NW

Signed this 15 day of April, 2025.

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

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)
Proposed Existing Barns 10, 11, and manure storage pad

Dogwood Poultry Farms Ltd

Proposed 1: Findings for the existing and proposed facilities are similar

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 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?	<div><input type="checkbox"/> > 1 m</div> <div><input type="checkbox"/> ≤ 1 m</div>	<div><input checked="" type="checkbox"/> > 1 m</div> <div><input type="checkbox"/> ≤ 1 m</div>	<div><input type="checkbox"/> > 1 m</div> <div><input type="checkbox"/> ≤ 1 m</div>	<div><input type="checkbox"/> > 1 m</div> <div><input type="checkbox"/> ≤ 1 m</div>	<div><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</div> <div><input type="checkbox"/> YES with exemption</div>	Not in a flood plain
	Surface water information	How many springs are within 100 m of the manure storage facility or manure collection area?	0				<div><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</div> <div><input type="checkbox"/> YES with exemption</div>
How many water wells are within 100 m of the manure storage facility or manure collection area?		0				<div><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</div> <div><input type="checkbox"/> YES with exemption</div>	None registered to LLD
What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)		700m Canal				<div><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</div> <div><input type="checkbox"/> YES with exemption</div>	820 m to canal
Groundwater information	What is the depth to the water table?	20m				<div><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</div> <div><input type="checkbox"/> YES with exemption</div>	Drilling report encountered saturated sand lenses at 4.3 mbgs
	What is the depth to the groundwater resource/aquifer you draw water from?	23m				<div><input checked="" type="checkbox"/> YES <input type="checkbox"/> NO</div> <div><input type="checkbox"/> YES with exemption</div>	No wells in area. No groundwater resource encountered in 4.5 m of drilling

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

Part 2 – Technical Requirements

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NRCB USE ONLY

ENVIRONMENTAL RISK SCREENING INFORMATION

ERST for proposed facilities

Facility	Groundwater score	Surface water score	File number
Barn 10	Low	Low	LA25017
Barn 11	Low	Low	LA25017
Solid manure storage pad	Low	Low	LA25017
Proposed facilities that meet or exceed AOPA technical requirements are assumed to pose a low risk to surface water and groundwater			

ERST for existing facilities

Facility	Groundwater score	Surface water score	File number
Barn 1	Low	Low	LA06016
2			LA20006
3			Deemed
4			Deemed
5			Deemed
6			LA13020A
7			LA13020A
8			LA16001
9			LA16001

~~ERST related comments:~~

Solid manure storage pads behind barns K,L,O,P

Solid manure storage pad behind barns F,G,H (to be converted to proposed barns)

Feedlot pens

LA20006

LA20006

MD permit 96-87

Part 2 – Technical Requirements

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NRCB USE ONLY

WATER WELL AND SURFACE WATER INFORMATION

Well IDs: No water wells registered to LLD _____

Surface water related concerns from directly affected parties or referral agencies: ☐ YES ☒ NO

Groundwater related concerns from directly affected parties or referral agencies: ☐ YES ☒ NO

Water wells ☒ N/A

If applicable, exemption for 100 m distance requirements applied: ☐ YES ☐ NO Condition required: ☐ YES ☐ NO

Surface water ☒ N/A

If applicable, exemption for 30 m distance requirements applied: ☐ YES ☐ NO Condition required: ☐ YES ☐ NO

Water Well Exemption Screening Tool ☒ N/A

Water Well ID	Preliminary Screening Score	Secondary Screening Score	Facility

Groundwater or surface water related comments:

Part 2 — Technical Requirements

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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
Thompson	SW31-11-19-4	1000m	Rural Ag	1	845	NA	Yes
Neibor Farms	SW30-11-19-4	1200m			945		
Huntsville Farms	NE30-11-19-4	1400m			1,220		
1509417 Alberta Ltd	NW25-11-20-4	1800m			1,585		
Jok Farms	SW36-11-2-4	1800m			1,704		

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)
<i>Dogwood Poultry Farms Ltd</i>	<i>NW 30-11-19-4</i>	<i>60 ha (148 ac)</i>	<i>irrigated</i>	60 ha (148 ac)	
*Kolk Farms Conrich Ltd.	see attached agreement	1600 ac	irrigated	1579 ac	Yes
* D&L Niebor Farms	SW & SE 30-11-19 W4	300 ac	irrigated	300 ac	Yes
Total				2,027 ac	

***AO added additional lands once provided by applicant**

* 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

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NRCB USE ONLY

MINIMUM DISTANCE SEPARATION

Methods used to determine distance (if applicable): Google earth

Margin of error (if applicable): +/- 3m

Requirements (m): Category 1: 496 m Category 2: 662 m Category 3: 827 m Category 4: 1,323 m

Technology factor: ☐ YES ☒ NO

Expansion factor: ☐ YES ☒ NO

MDS related concerns from directly affected parties or referral agencies: ☐ YES ☒ NO

LAND BASE FOR MANURE AND COMPOST APPLICATION

Land base required: 1,980.9 ac

Land base listed: 2,048 ac

Area not suitable: 21 ac

Available area: 2,027 ac

Requirement met: ☒ YES ☐ NO

Land spreading agreements required: ☒ YES ☐ NO

Manure management plan: ☐ YES ☒ NO

If yes, plan is attached: ☐

PLANS

Submitted and attached construction plans: ☒ YES ☐ NO

Submitted aerial photos: ☒ YES ☐ NO

Submitted photos: ☐ YES ☒ NO

GRANDFATHERING

Already completed: ☒ YES ☐ NO ☐ N/A

If already completed, see LA06016

Manure Spreading Agreement

This agreement is between Dogwood Poultry Farms Ltd., manure producer, and
D&L Nieboer Farms manure receiver.

Length of agreement: This agreement is valid for a time period of 5
(minimum of one year)

Legal land location	Soil type ¹	Acres suitable for manure spreading ²
Sw & SE 30-11-19 W4	Irrigated	300

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

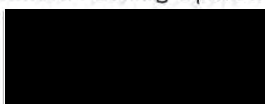
² Land within required setbacks from water bodies, water wells, residences, etc. is not to be included.

Other comments:

Manure producer (Confined Feeding Operation) Legal Land Location NW30-11-19-4

May 6, 2025

Date of signing



Signature

Derek Hoschka

Print name

Dogwood Poultry Farms Ltd.

Corporate name(if appl)

Manure Receiver – Landowner(s)³

May 6 2025

Date of signing



Signature

Rod Nieboer

Print name

D&L Nieboer Farm

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.

Manure Agreement

Dogwood Poultry #2 and Kolk Farms Conrich Ltd.

Overview: This document outlines the general parameters of the manure agreement between Dogwood Poultry #2 and Kolk Farms Conrich Ltd. For the purposes of this agreement, Kolk Farms Conrich Ltd. will mean/include Kolk Farms Conrich Ltd, or a designate of Kolk Conrich Farms Ltd. consist with their manure management process.

Length of Agreement: 10 years beginning July 1/2016.

Notice of Termination of Agreement: 120 days' notice of any substantial changes or termination of this agreement.

Kolk Farms Conrich Ltd. will:

1. Receive all manure from the poultry operations of Dogwood Poultry #2 – near Iron Springs Alberta.
2. Pick up the Dogwood Poultry #2 at least two times a year.
3. Take samples of the manure prior to pick up of manure, and will send to a lab at their own expense.
4. Provide all equipment/personnel, etc. to load and transport all manure from Dogwood #2.
5. Provide an agreed upon amount of straw to Dogwood #2 on an annual basis, first load to be provided on Oct. 1/2016 and will follow a mutually agreed upon schedule after first delivery.
6. Drop off the straw at an agreed upon spot at Dogwood #2; Kolk Farms Conrich Ltd. is not responsible for manual stacking, hand-bombing, etc. the hay into any building, shed, cover, etc.
7. Complete all necessary paperwork to ensure that manure received by any Kolk Farms Ltd. designate is completed as required for any NRCB or Dogwood #2 customer audits.

Dogwood Poultry #2 will:

1. Make best efforts to keep manure clear of foreign substances.
2. Notify Kolk Farms Conrich Ltd. in advance if there are any materials not originating from the manure or any potential issues.

Signed:

Kolk Farms Conrich Ltd.

#2

Date

AUG 26/2016

Dogwood Poultry

Date

Sept 8/2016

Manure Spreading Agreement

This agreement is between Dogwood Poultry Farms, Manure Producer, and, Kolk Farms
Conrich Ltd. Manure Receiver.

Length of agreement: This agreement is valid for a time period of 10 years.
(minimum of 3 years)

Land Location	Soil Type	Acres suitable for manure spreading
S1 NW-33-13-19	Irrigated, Brown	160 Acres
S2 SE-32-13-19	Irrigated, Brown	160 Acres
S3 SW-33-13-19	Irrigated, Brown	160 Acres
S4 NE-29-13-19	Irrigated, Brown	160 Acres
S5 NW-28-13-19	Irrigated, Brown	160 Acres
S6 SE-29-13-19	Irrigated, Brown	160 Acres
M1 NE-32-13-19	Irrigated, Brown	160 Acres
M2 NW-29-13-19	Irrigated, Brown	160 Acres
M3 SW-30-13-19	Irrigated, Brown	160 Acres
M4 SE-30-13-19	Irrigated, Brown	160 Acres

Other comments:

Lethbridge County

Manure Producer: (Confined Feeding Operation) Legal Land Location: NW 30-11-19-W4

Sept 8/2016

Date of signing

Signature

Kent Heschke

Print name

Dogwood Poultry

Corporate name

Manure Receiver - Landowner(s):

AUG 26 2016

Date of signing

Signature

John Kolk

Print name

Kolk Farms Conrich Ltd.

Corporate name

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

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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)

SOLID MANURE, COMPOST, & COMPOSTING MATERIALS: Barns, feedlots, & storage facilities - Naturally occurring protective layer

(complete a copy of this section for **EACH** barn, feedlot, and storage facility for solid manure, composting materials, or compost with a naturally occurring protective layer for the liner)

Facility description / name (as indicated on site plan)

1. Poultry Barn 10

2. Poultry Barn 11

3. Solid manure storage pad

Manure storage capacity

	Length (m)	Width (m)	Depth below ground level (m)	NRCB USE ONLY Estimated storage capacity (m ³)
1.	500' 152.4 m x 15.2 m	50'	0	
2.	500' 152.4 m x 15.2 m	50'	0	
3.	30.48 m x 76. 51 m		TOTAL CAPACITY	Sufficient solid manure storage

Applicant is proposing a naturally occurring protective layer as the primary liner. They will then place roller compacted concrete (RCC) for the barn floors (secondary liner).

☒ I plan to use a short-term solid manure storage (STMS) as part of my manure storage and handling plan for this CFO. (The AOPA requirements for STMS are set out in the NRCB [Short-Term Solid Manure Storage Requirements Fact Sheet](#).)

Surface water control systems

Describe the run-on and runoff control system
everything indoors

Berm around the solid manure storage pad

Naturally occurring protective layer details

Thickness of naturally occurring protective layer	3 (m)	Provide details (as required)	
Soil texture	% sand	% silt	% clay
Hydraulic conductivity - naturally occurring protective layer	Depth and type of soil tested 4.5m clay loam	Hydraulic conductivity (cm/s) 1.1 x 10(-7)	Describe test standard used modified falling head test

Additional information (attach copies of soil test reports)

See attached report.

NRCB USE ONLY

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

Type text here

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SOLID MANURE, COMPOST, & COMPOSTING MATERIALS: Barns, feedlots, & storage facilities - Naturally occurring protective layer (cont.)

NRCB USE ONLY

Nine month manure storage volume requirements met: ☒ YES

☐ YES With STMS

☐ NO

Depth to water table: 4.3 m

Requirements met: ☒ YES ☐ NO

Depth to uppermost groundwater resource: > 4.3 m

Requirements met: ☒ YES ☐ NO

ERST completed: ☒ see ERST page for details

Surface water control systems

Requirements met: ☒ YES ☐ NO Details/comments:

The barns will be under roof, so there will not be any run on/run off.

The applicant has stated via email (June 23, 2025) that they will construct a berm around the solid manure storage pad to control run on/run off.

Naturally occurring protective layer details

Layer specification comments (e.g. sand lenses; layering uniform or irregular; number and location of boreholes):

The proposed barns are being build on top of the existing permitted solid manure storage pad. The primary liner of the proposed barn will be a naturally occurring protective layer (NOPL) with a secondary roller compacted concrete (RCC) liner.

The measured hydraulic conductivity of the NOPL is 1.1×10^{-7} cm/s.



November 21, 2019
Wood File: BX30618

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www.woodplc.com

Derek Hoschka
Dogwood Poultry Farms Ltd.
13538 73 Ave
Surrey, BC V3W 2R6

Attention: Mr. Derek Hoschka:

**Re: Geotechnical Review and Evaluation
Proposed Solid Manure Storage Pad
NW30-11-19-W4M, near Iron Springs, AB**

As requested, Wood Environment & Infrastructure Solutions (Wood) 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 encompasses the soil conditions associated with proposed solid manure storage (see Figure 1).

In order to demonstrate the suitability of the natural soils for consideration as a naturally occurring protective layer, four boreholes were advanced at the site in June 2019. The boreholes were advanced at the approximate locations illustrated on Figure 1.

The boreholes were advanced by a truck-mounted drill rig owned and operated by Chilako Drilling Services and extended to depths of 3.0 m to 4.5 m below existing grades. The boreholes were logged by Larry Delong of Chilako Drilling Services Ltd. (see attachments).

In general, the natural mineral soils encountered within the boreholes were lacustrine silty clay becoming clay till at depth. Clay fill was noted in all boreholes to depths between 0.8 m and 1.2 m below grade. No groundwater resource (as defined by the AOPA) was identified within the 4.5 m drilling depth at the site.

In order to demonstrate the permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in borehole SS4-19. Test well SS4-19 was screened from 2.7 m to 4.3 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, the average 24-hour water drop was measured to be about 0.97 m in SS4-19.

In order to calculate the permeability of the screened portion of the clay and clay till strata at the test well locations, 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 In Situ Permeability Test reports, attached. As outlined on the report, the results of the *in situ* permeability testing indicate a hydraulic conductivity, k_s , of 1.1×10^{-7} cm/s at SS4-19.

Using the measured permeability of the clay stratum, the 1.6 metres of clay screened at SS4-19 have been estimated to represent about 14 m of naturally occurring materials having a hydraulic conductivity of

1×10^{-6} cm/s. This represents natural material protection in excess of the minimum requirements outlined by the AOPA for solid manure storage (minimum 2 m, Section 9.5-c).

Conclusion

Based on the results of the current investigation and permeability testing, and our understanding of the site and proposed development at the site, it is Wood's opinion that the naturally occurring materials at the site satisfy the AOPA requirements for a naturally occurring 'protective layer' for the proposed solid manure storage.

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

Yours truly,

**Wood Environment and Infrastructure Solutions,
A Division of Wood Canada Limited**



10 Jan 2020

Co-authored by:
Bogdan Masala, EIT
Geotechnical Services

John Lobbezoo, P.Eng.
Associate Engineer, Geotechnical
Branch Manager, Lethbridge & Medicine Hat

Permit to Practice No. P-4546

Attachments

Figure 1 Borehole Locations
In Situ Permeability Test Calculations (SS4-19)
Soil Profile and Parent Material Description, Chilako Drilling Services



Figure 1
 Borehole Locations
 Proposed Manure Storage Pad
 Dogwood Poultry Farms Ltd.
 Wood File: BX30618
 September, 2019

SS4-19



In Situ Permeability Test

Modified Falling Head Permeability Equation

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

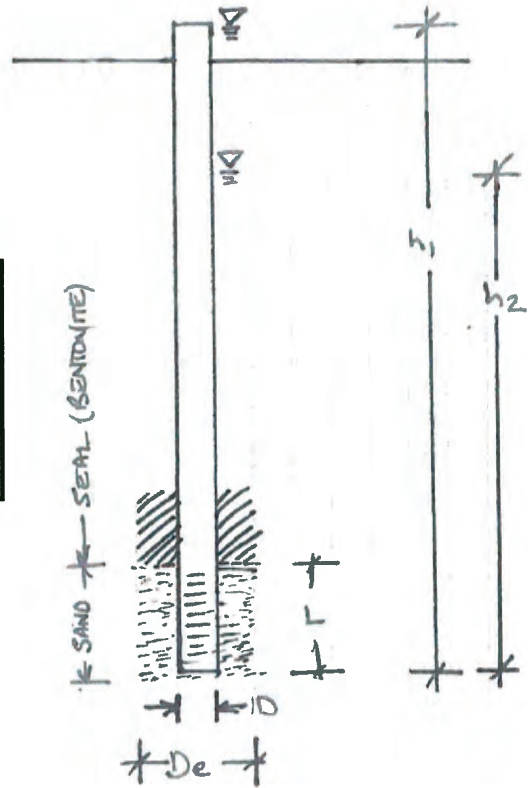
taken from USBR Engineering Geology Field Manual Volume 2 (2001)

SS4-19 - Dogwood Poultry Farms Ltd. - NW-30-11-19-W4

Wood File: BX30618

INPUT VARIABLES	Terms	Value	Definition
	D	0.0520	diameter of standpipe (m)
	De	0.1500	diameter of borehole (m)
	L	1.60	length of sand section (m)
	h1	4.90	initial height of water above base of hole (m)
	h2	3.93	final height of water above base of hole (m)
	t	24.0	time of test (h)

Ks = 1.1E-07 cm/sec



CHILAKO DRILLING SERVICES LTD

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

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: NW30-11-19W4, Dogwood Poultry Farms Ltd.

Date: 24-Jun-19

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
SS1-19	0385579	0-0.8	CL	SM	Fill		
	5533476	0.8-1.5	CL	SM	Lac		Stiff, med plastic, brown
		1.5-2.5	C	M	Till		Stiff, med-high plastic, dark brown
		2.5-3.0	CL-C	M	Till		Stiff, med plastic, brown
SS2-19	0385575	0-1.2	CL	D	Fill		Stiff, organics
	5533440	1.2-2.1	CL-SiCL	M	Lac		Stiff, med plastic, brown
		2.1-3.0		M	Till		Stiff, med plastic, dark brown
SS3-19	0385577	0-1.2	CL	SM	Fill		Organics
	5533406	1.2-2.2	CL-SiCL	M	Lac		V. firm, med plastic, brown
		2.2-3.0	CL	M	Till		V. firm-stiff, med plastic, dark brown
SS4-19	0385564	0-1.2	CL	SM	Fill		
	5533435	1.2-1.5	CL	SM	Lac		Topsoil
		1.5-1.9	CL	SM	Lac		
		1.9-2.6	FSCL	VM	Lac		Soft, low plastic, brown
		2.6-4.3	CL	M	Till		V. firm, med plastic, brown
		4.3-4.5	CL	M	Till		Stiff, med plastic, brown, sat sand lenses
							50mm H.C. well installed to 4.3m Bentonite: 4.5-4.3m Screen: 4.3-2.8m Sand: 4.3-2.7m Bentonite: 2.7-0.0m 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. VFSCl = Very Fine Sandy Clay Loam

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

ALL SIGNATURES IN FILE

☒ YES ☐ NO

DATES OF APPROVAL OFFICER SITE VISITS

May 14, 2025	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: May 20, 2025

Municipality: Lethbridge County

☒ letter sent ☒ response received ☒ written/email ☐ verbal ☐ no comments received

Alberta Health Services: ☒ N/A

☐ letter sent ☐ response received ☐ written/email ☐ verbal ☐ no comments received

Alberta Environment and Parks: ☐ N/A

☒ letter sent ☐ response received ☐ written/email ☐ verbal ☒ no comments received

Alberta Transportation: ☐ N/A

☒ letter sent ☒ response received ☒ written/email ☐ verbal ☐ no comments received

Alberta Regulatory Services: ☒ N/A

☐ letter sent ☐ response received ☐ written/email ☐ verbal ☐ no comments received

Other: Lethbridge Northern Irrigation District (LNID) ☐ N/A

☒ letter sent ☒ response received ☒ written/email ☐ verbal ☐ no comments received

ATCO, Barrel Oil Corp, Sutton Energy Ltd., Sign Alta Resources Ltd., FortisAlberta Ltd.
Other: ☐ N/A

☒ letter sent ☐ response received ☐ written/email ☐ verbal ☒ no comments received