

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	<u>LA26061</u>	<u>Sec. 2-15-18 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 *Access to Information Act* and *Protection of Privacy Act*. This information is public unless the NRCB grants a written request that certain sections remain confidential.

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.

July 22, 2026

Date of signing

Serfas Land Company Inc

Corporate name (if applicable)



Signature

Kevin Serfas

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)
Expand 6 Catch Basins by 7m in width	126m x 40m x 4m

Existing facilities: list ALL existing confined feeding operation facilities and their dimensions		
Existing facilities	Dimensions (m) (length, width, and depth)	NRCB USE ONLY
102 Pens	57.17m x 80m	
15 Pens	57.17m x 40m	
6 Catch Basins	126m x 33m x 4m	

NRCB USE ONLY

AO Comment: CFO is currently permitted under NRCB Approval LA20015.



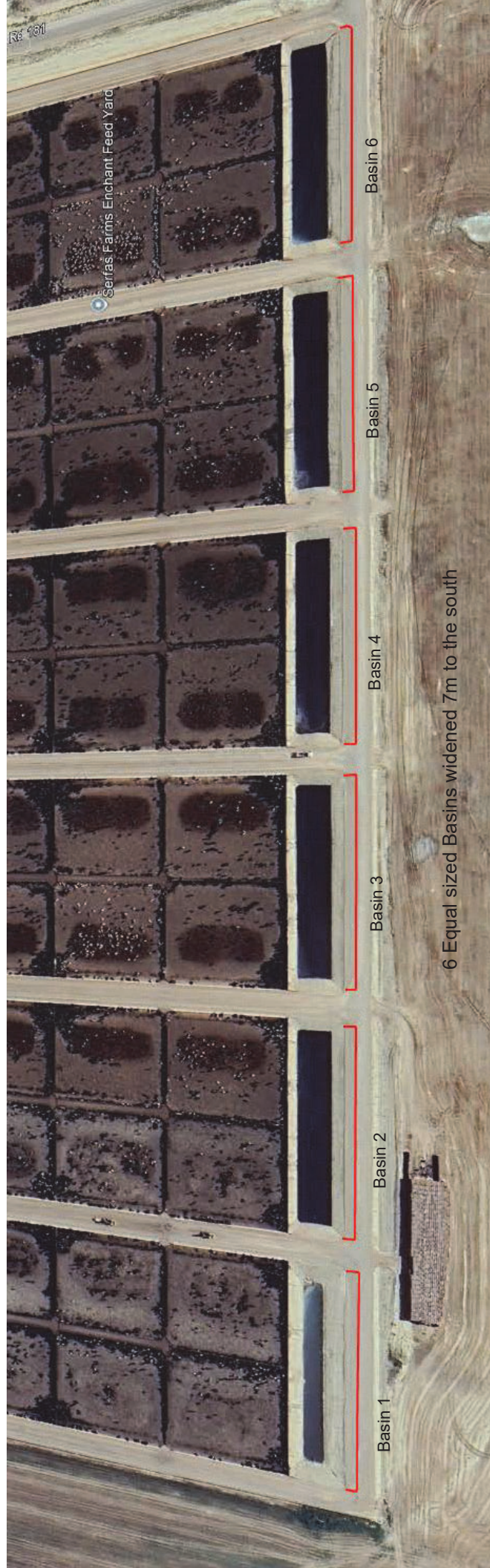
Existin Feedyard

BRID Canal

Serfas Farms Enchant Feed Yard

Proposed Lagoon Expansion

Township Rd 150



6 Equal sized Basins widened 7m to the south

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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 n/a

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
Livestock category and type (Available in the Schedule 2 of the Part 2 Matters Regulation)	Permitted livestock numbers	Proposed increase or decrease in number (if applicable)	Total
Beef Finishers	40,000	15,000	55000
AO Comment: Livestock numbers taken from Part 1 application, total proposed livestock has not changed.			

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)

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 _____
Water From BRID _____

Signed this 22 day of July, 2026.

Signature


or agent

Part 2 – Technical Requirements

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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 _____

Signed this ____ day of _____, 20____.

Signature of applicant or agent

Information about related proceedings (MANDATORY)

☐ I am aware of proceedings (applications, appeals, amendments, etc.) with Environment and Protected Areas or the Environmental Appeals Board in relation to this land location:

☐ under the *Environmental Protection and Enhancement Act*

☐ under the *Water Act*

☐ with the Environmental Appeals Board

☒ No proceedings

If yes, these proceedings are ☐ ongoing or ☐ past _____ (year).

☐ N/A

Signed this 27 day of July, 20____.
2



Signature of Applicant or Agent

WATER CONVEYANCE AGREEMENT
(Water under District's Water Licence)

THIS AGREEMENT is made in duplicate this 5th day of October AD 20 20

Between: **BOW RIVER IRRIGATION DISTRICT**
of Box 140, Vauxhall, in the Province of Alberta
(hereinafter called the "DISTRICT") of the First Part

and

SERFAS FARMS LTD.
of P.O Box 101, Turin, in the Province of Alberta
(hereinafter called the "APPLICANT") of the Second Part

WHEREAS the DISTRICT is empowered under Sections 21 of the Irrigation Districts Act to grant and enter into agreements known as Water Conveyance Agreements, and

WHEREAS the DISTRICT has amended the purpose of use of a portion of water within DISTRICT Water Licence, Priority No. 1992-02-05-10, to purposes other than irrigation and domestic use, and

WHEREAS the Alberta Environment/BRID amending agreement of April 27, 2011 gave the District the right to divert water from the Carseland Bow Headworks system to supply water for any other purpose that is consistent with a water licence held by the District, and

WHEREAS the land described as N.W. and N.E and S.E. 2-15-18-W4M (hereinafter collectively called the "PARCELS OF LAND"), has been included in the Bow River Irrigation District under Section 84 and 85 of the Irrigation Districts Act, and

WHEREAS the APPLICANT has applied to the DISTRICT to enter into a water conveyance agreement to annually convey 372 acre feet of water for the purpose of Agriculture (Feedlot) use on the PARCELS OF LAND, which water is part of the amended portion of the DISTRICT'S Water Licence with Priority No. 1992-02-05-10.

NOW THEREFORE subject to the terms and conditions hereinafter expressed, the parties hereto agree as follows:

1. The DISTRICT will annually make available to the APPLICANT 372 acre feet of water for the purpose of Agriculture (Feedlot) use, to be conveyed through the irrigation works of the DISTRICT, not in a continuous flow, but as it shall be available, to a Point of Delivery off of H-6 Pipeline, for Agriculture (Feedlot) purposes only and which water is to be used exclusively on the PARCELS OF LAND.
2. The APPLICANT shall be responsible for all costs to supply, install and maintain the turnout from the irrigation works of the DISTRICT (which includes the Carseland Bow Headworks system) at the Point of Delivery as well as the APPLICANTS water diversion and distribution system, and to make any alterations or additions necessary to the irrigation works of the DISTRICT, in order to take delivery of water. The turnout and any alterations to the DISTRICT'S works shall be designed and constructed according to the DISTRICT'S specifications and subject to the DISTRICT'S approval. The APPLICANT shall maintain the turnout to the continued satisfaction of the DISTRICT.

WATER CONVEYANCE AGREEMENT
(Water under District's Water Licence)

3. This agreement is subject to the APPLICANT obtaining and maintaining all approvals and authorizations to construct, operate and maintain his water diversion and distribution system solely at his cost.
4. The APPLICANT hereby acknowledges and agrees that the water in the irrigation system of the DISTRICT may not be potable or may not be suitable for irrigation or other purposes, and the DISTRICT makes no representation, warranty or guarantee, express or implied that the water delivered under this agreement is potable or suitable for the APPLICANT's purposes and the APPLICANT agrees to accept the water delivered in the condition in which it may be found at the Point of Delivery from time to time and to provide such testing, treatment or filtering as the APPLICANT considers necessary.
5. The APPLICANT acknowledges that the irrigation system of the DISTRICT is an open ditch system subjecting the water therein to contamination from all manner of environmental, human and animal factors beyond the control of the DISTRICT and the DISTRICT does not regulate, control or monitor the quality of the water in its system.
6. The DISTRICT shall not be liable for any claim of loss, injury or damage whatsoever arising out of the failure or inability of the DISTRICT to supply water for the purposes covered by this agreement.
7. This agreement shall constitute a yearly term from the date noted above and shall continue in full force and effect from year to year with the APPLICANT having the option of termination of this agreement subject to notice of termination in writing by Registered Mail or in person at the addresses of service listed here below, and giving a minimum of 60 days notice prior to the effective date of the termination.
BOW RIVER IRRIGATION DISTRICT
704 - 7th Avenue North, P.O. Box 140, VAUXHALL, ALBERTA T0K 2K0
8. The APPLICANT will indemnify and save harmless the DISTRICT from any and all injury and damage by reason of the seepage of water from the APPLICANT's conveyance, pumping and storage works and/or from rights of way and easements or titled lands.
9. All water diverted from the works of the DISTRICT by the APPLICANT shall be metered by the APPLICANT through an accurate water meter located at or near the Point of Delivery installed and maintained in good working order at the cost of the APPLICANT, with unrestricted access to the meter by the DISTRICT, unless an alternate method of estimating volumes is agreed upon.
10. The APPLICANT shall record and forward to the DISTRICT at its address of notice, a report of water diverted under this agreement on a regular basis as requested by the DISTRICT with an annual report being submitted to the DISTRICT no later than the 15th of October of each year.
11. The DISTRICT will invoice the APPLICANT on an annual basis and the APPLICANT shall annually pay to the DISTRICT a conveyance fee as established by DISTRICT By-Laws for each acre foot of water agreed to be annually made available to the APPLICANT as stated in Clause 1 of this agreement, regardless of whether or not the actual annual diversion and use by the APPLICANT was less than the agreed upon amount to be made available.
12. In the event the APPLICANT, in any one twelve month period, beginning November 1st of one year and ending October 31st of the following year, diverts or uses an amount of water exceeding the agreed upon amount of water to be annually made available to the APPLICANT as noted in Clause 1 of this agreement, the APPLICANT must pay double the conveyance fee as noted in Clause 11 of this agreement, for each acre foot of water diverted in excess of the agreed upon amount.

WATER CONVEYANCE AGREEMENT
(Water under District's Water Licence)

13. In addition to the sums payable under Clause 11 and Clause 12 above, the APPLICANT also agrees to pay such amounts as may be imposed from time to time pursuant to Section 132 of the Irrigation Districts Act as "penalties on arrears", which shall apply to all sums payable which have not been paid by the APPLICANT within 30 days of billing.

14. In the event, in any twelve month period, beginning November 1st of one year and ending October 31st of the following year, the DISTRICT determines that additional water over and above the agreed upon amount of water to be annually made available to the APPLICANT as noted in Clause 1 of this agreement, is not available for the APPLICANT, the DISTRICT will notify the APPLICANT upon which time the APPLICANT is not allowed to withdraw more than the agreed upon amount.

15. Nothing in this agreement shall be construed as granting to or conferring upon the APPLICANT any proprietary right or interest in any works owned or operated by the DISTRICT.

16. In the event the APPLICANT sells or transfers the operations benefited by this agreement to another party and application is made to the DISTRICT to transfer this agreement to the new party, this agreement will be transferred to the new party subject to the stated purpose of use of water and location of use not changing.

17. Any change in the purpose of use of water or location of use is strictly prohibited.

18. a) Should the APPLICANT be in default of any of the covenants herein provided, the DISTRICT may, upon notice to the APPLICANT, reduce or terminate the delivery of water to the APPLICANT until such time as the APPLICANT has remedied his default.

b) The exercise by the DISTRICT of its rights under Clause 18. a) above, shall not be construed as a termination by the DISTRICT of this agreement.

THIS AGREEMENT is executed by the Parties as of the date shown on the first page of the Agreement.

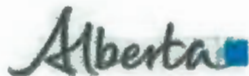
BOW RIVER IRRIGATION DISTRICT:

[Redacted signature area for Bow River Irrigation District]

APPLICANT:

Kevin Serfas





Water Well Drilling Report

[View in Imperial](#) [Export to Excel](#)

GIC Well ID 237253
GoA Well Tag No.
Drilling Company Well ID
Date Report Received 1994/04/28

GOWN ID

The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database.

Well Identification and Location										Measurement in Metric	
Owner Name	Address			Town		Province		Country	Postal Code		
WIEST, ROB	P.O. BOX 1827 ENCHANT								T0K 1V0		
Location	1/4 or LSD	SEC	TWP	RGE	W of MER	Lot	Block	Plan	Additional Description		
1		3	15	18	4						
Measured from Boundary of					GPS Coordinates in Decimal Degrees (NAD 83)						
121.92 m from South					Latitude 50.223933 Longitude -112.389241					Elevation m	
134.11 m from East					How Location Obtained					How Elevation Obtained	
					Not Verified					Not Obtained	

Drilling Information	
Method of Drilling Rotary	Type of Work New Well
Proposed Well Use Domestic & Stock	

Formation Log			Measurement in Metric
Depth from ground level (m)	Water Bearing	Lithology Description	
10.06		Brown Clay & Rocks	
10.36		Gray Clay	
10.67		Brown Shale	
11.28		Black Shale & Coal	
13.72		Gray Sandstone	
17.98		Gray Shale	
18.29		Coal	
20.12		Gray Shale	
20.42		Coal	
21.34		Hard Coal	
22.86		Gray Shale	

Yield Test Summary			Measurement in Metric
Recommended Pump Rate	13.64 L/min		
Test Date	Water Removal Rate (L/min)	Static Water Level (m)	
1993/06/30	27.28	4.88	

Well Completion			Measurement in Metric
Total Depth Drilled	Finished Well Depth	Start Date	End Date
22.86 m		1993/06/10	1993/06/30
Borehole			
Diameter (cm)	From (m)	To (m)	
0.00	0.00	22.86	
Surface Casing (if applicable)		Well Casing/Liner	
Steel	Plastic		
Size OD : 14.12 cm	Size OD : 11.43 cm		
Wall Thickness : 0.478 cm	Wall Thickness : 0.635 cm		
Bottom at : 11.89 m	Top at : 4.57 m		
	Bottom at : 22.86 m		
Perforations			
From (m)	To (m)	Diameter or Slot Width (cm)	Slot Length (cm)
10.67	22.86	0.051	Hole or Slot Interval (cm)
			7.62
Perforated by Machine			
Annular Seal Driven			
Placed from 0.00 m to 11.89 m			
Amount			
Other Seals			
Type		At (m)	
Screen Type			
Size OD : 0.00 cm			
From (m)	To (m)	Slot Size (cm)	
Attachment			
Top Fittings		Bottom Fittings	
Pack			
Type		Grain Size	
Amount			

Contractor Certification	
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER	Certification No 1
Company Name BIRKNESS DRILLING LTD.	Copy of Well report provided to owner Date approval holder signed

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: Catch Basin 1-6

Proposed 1: Expand Catch Basin 1-6

Proposed 2:

Proposed 3:

Facility and environmental risk information		Facilities				NRCB USE ONLY	
		Existing	Proposed 1	Proposed 2	Proposed 3	Meets requirements	Comments
Surface water information	Flood plain 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?	☒ >1 m ☐ ≤ 1 m	☒ >1 m ☐ ≤ 1 m	☐ >1 m ☐ ≤ 1 m	☐ > 1 m ☐ ≤ 1 m	☐ YES ☐ NO ☐ YES with exemption	
	How many springs are within 100 m of the manure storage facility or manure collection area?	0	0			☐ YES ☐ NO ☐ YES with exemption	
	How many water wells are within 100 m of the manure storage facility or manure collection area?	0	0			☐ YES ☐ NO ☐ YES with exemption	
Groundwater information	What is the shortest distance from the manure collection or storage facility to a surface water body? (e.g., lake, creek, slough, seasonal)	150m Canal	150 m Canal			☐ YES ☐ NO ☐ YES with exemption	
	What is the depth to the water table?	3.9m				☐ YES ☐ NO ☐ YES with exemption	
	What is the depth to the groundwater resource/aquifer you draw water from?	1m				☐ YES ☐ NO ☐ YES with exemption	

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

All Drilling and Engineering reports from LA20015 Attached

Part 2 — Technical Requirements

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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)
RAW Farms	SE 34-14-18	1500m				
Serfas Farms	SE 3-15-18	1100m				
Serfas Farms	NW 34-14-18	700m				

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)
Serfas	Please see attached	682ha	Irrigation		
Serfas	Please see attached	525ha	Brown Soil Dry		
AO Comment: Land in addition to the 1,984 ha dry & 1,594 ha irrigated applicant had provided for Approval LA20015.					
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)

All information is in Application LA20015

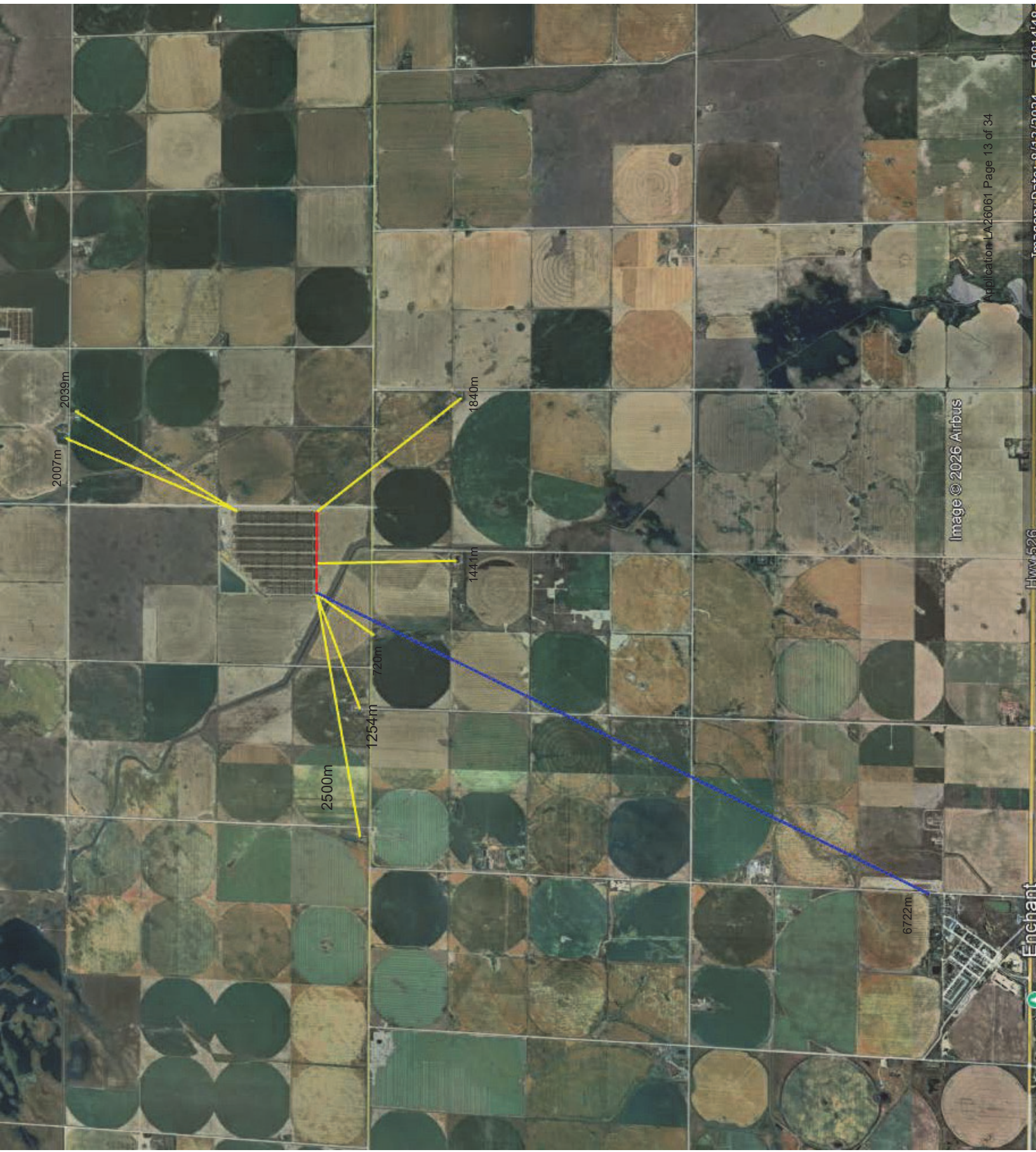


Image © 2026 Airbus

Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information

NRCB application number: LA26061

Operator/operation name: Serfas Land Company Inc/ Kevin Serfas

Address: Box 101 Turin, Ab

Postal Code: T0K 2H0

Legal land location of confined feeding operation: 2-15-18-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:
40,000 Beef Finishers
- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:
Add 15,000 Beef Finishers to permit for total of 55,000
- 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):
No change to any foot print

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

Permit Applicant: LA26061

Date: July 21, 2026

Signature

Residence owner(s) to initial:

Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title: RAW Farms

Legal land location of residence(s): SE 34-14-18

Telephone number(s)¹:

Email address(es)¹:

Address(es)¹ and Postal code(s)¹:

Box 1895 ENCHANT, AB T0K0V0

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 LA26061

Signature _____
in title

RICHARD WIEST

Printed names of all residence owner(s) on title

Date: July 22, 2026

Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information

NRCB application number LA26061

Operator/operation name: SerfasLand Company Inc / Kevin Serfas

Address: Box 101 Turin, Ab

Postal Code: T0K 2H0

Legal land location of confined feeding operation: 2-15-18-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.

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- The current scope of my confined feeding operation (CFO), including the type, number, and category of livestock, if any, is:
40,000 Beef Finishers
- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:
Add 15,000 Beef Finishers to permit for total of 55,000
- 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):
No change to any foot print

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

Permit Applicant: LA26061

Signature

Date: July 21, 2026

Residence owner(s) to initial:

Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title: Serfas Farms / Serfas Land Company Inc

Legal land location of residence(s): SE 3-15-18

Telephone number(s)¹: [REDACTED] Email address(es)¹: [REDACTED]

Address(es)¹ and Postal code(s)¹: Box 101 Turin, Ab T0K 2H0

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 LA26061

Signatures of all residence owner(s) on title

Serfas Farms Ltd

Printed names of all residence owner(s) on title

Date: July 22, 2026

Minimum Distance Separation (MDS) Waiver (declaration)

Applicant information

NRCB application number LA26061

Operator/operation name: SerfasLand Company Inc / Kevin Serfas

Address: Box 101 Turin, Ab Postal Code: T0K 2H0

Legal land location of confined feeding operation: 2-15-18-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:
40,000 Beef Finishers
- My application for a new AOPA permit proposes the following changes to the existing livestock category, type and/or capacity at my CFO:
Add 15,000 Beef Finishers to permit for total of 55,000
- 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):
No change to any foot print

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

Permit Applicant: LA26061

Signature

Date: July 21, 2026

Residence owner(s) to initial:

Minimum Distance Separation (MDS) Waiver (declaration)

Residence owner(s) information

ALL Names on land title: Serfas Farms

1 Serfas Land Company Inc

Legal land location of residence(s): NW 34-14-18

Telephone number(s):

Email address(es)¹:

Address(es)¹ and Postal code(s)¹: Box 101 Turin, Ab T0K 2H0

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: LA26061

Signatures of all residence owner(s) on title

Serfas Farms Ltd

Printed names of all residence owner(s) on title

Date: July 22, 2026

Russell, Stacey

From: Kevin Serfas <kevinserfas@gmail.com>
Sent: Tuesday, February 11, 2020 2:02 PM
To: Russell, Stacey
Subject: 2445 acres Serfas owned Irrigation

2,290 acres
 926.73 ha

Groten	All	2	15	18	270
Groten 1/4	SE	10	15	18	145
Howg	SE	25	14	19	160
Hart	SW	3	16	18	155
Ruggles	NW	10	16	18	160
Milos	SW	35	16	18	160
Milos	SE	35	16	18	160
Odland	W1/2	10	15	18	305
Liebreich 1	NW	6	16	18	148
Liebreich 2	NE	6	16	18	149
Liebreich 3	SE	6	16	18	160
Liebreich 4	NW	31	15	18	160
Peterson	E 1/2	22	14	19	313

This is all irrigated land that we own to be used as land base.

Kevin Serfas
 Serfas Farms Ltd

Sent from my iPhone

Russell, Stacey

From: Kevin Serfas <kevinserfas@gmail.com>
Sent: Tuesday, February 11, 2020 2:31 PM
To: Russell, Stacey
Subject: 4905 acres Owned Brown Dryland

4,905 acres
 1,984.98 ha

DM 1	SE	22	13	19	155
DM 2	SW	23	13	19	155
DM 3	NW	14	13	19	155
DM4	SW	14	13	19	160
DM5	SE	14	13	19	160
DM 6	NE	9	13	18	160
DM 7	SW	10	13	19	160
DM 8	SE	10	13	19	160
DM 9	SW	11	13	19	160
DM 10	NW	3	13	19	150
DM 11	SW	1	13	19	155
Pro1	NW	12	12	19	160
Pro2	SW	12	12	19	160
Pro3	SE	12	12	19	160
Pro4	NW	1	12	19	160
LC1	NE	22	12	19	160
LC2	SE	22	12	19	160
LC3	NE	15	12	19	160
LC4	SE	15	12	19	160
M 1	SE	7	12	18	160
M 2	NE	6	12	18	160
M3	NE	35	11	18	160
M 4	NW	31	11	17	160
M 5	SW	31	11	17	160
MW 1	NW	36	12	18	145
MW 2	SW	36	12	18	160
MW3	NW	25	12	18	160
JW1	SE	9	13	18	150
JW2	NE	4	13	18	160
SO1	NW	9	12	18	160
CS1	SE	32	12	18	160

This is the brown soil Dryland we own to be declared along with the owned irrigation I sent you and the spreading agreement I also sent. This should more than cover land requirements. If there is anything else, please let me know so we can get this process moving forward. Thanks Stacey.

Kevin Serfas
 Serfas Farms Ltd
 (403)330-5603

Page 23 of 34

Total 1,650 acres
667.73 ha

Manure Spreading Agreement

RAW Farms LTD agree to allow Serfas Farms (applicant) to spread
manure on the following fields during 2019-2025 (calendar year).

Land location	Acres	Suitable for spreading	Soil zone
SE 34-14-18	120		1RR
NE 34-14-18	130		1RR
SW 34-14-18	130		1RR
SW 2-15-18	100		1RR
NE 35-14-18	130		1RR
NW 35-14-18	130		1RR

Extension of Original agreement from 2026-2035

Signed: _____

Date: Feb-10/20

Signed

Signed

2026-07-28

Signed by:

Rich Wiest

D2ED441C8B134AF...

DocuSigned by:

KD

27F3E2585595473...

Manure Spreading Agreement

RAW FARMS LTD agree to allow SERFAS FARMS (applicant) to spread manure on the following fields during 2019-2025 (calendar year).

Land location	Acres	Suitable for spreading	Soil zone
NE-4-15-18	130		1RR
SE-4-15-18	130		1RR
SW-3-15-18	130		1RR
NE-33-14-18	130		1RR
SE-21-14-18	130		1RR
NW-13-15-18	130		1RR

Signed: _____

Date: Feb-10/20

Extension of Original agreement from 2026-2035

Signed

Signed by:

Rich Wiest

D2ED441C8B134AF...

Signed

DocuSigned by:

KD

27F3E2585595473...

2026-07-28

Manure Spreading Agreement

RAW FARMS LTD agree to allow SERFAS FARMS (applicant) to spread manure on the following fields during 2019-2025 (calendar year).

Land location	Acres	Suitable for spreading	Soil zone
SW-24-15-18	130		122
			1

Signed: _____



Date: Feb 10/20

Extension of Original agreement from 2026-2035

Signed

Signed by:

Rich Wiest

D2ED441C8B134AF...

Signed

DocuSigned by:

KD

27F3E2585595473...

2026-07-28

Fields for Manure Application
Serfas Farms Application LA26061

All land locations are owned by Serfas Farms Ltd, Serfas Land Company Inc,
 John Mehalko Farms, Helen Mehalko Farms Or Kevin & Mark Serfas.
 These are all companies owned by Kevin and Mark Serfas

Irrigation

Chinook 1	NE	36	13	19	145
Chinook 2	NW	31	13	18	145
Gil East	SW	2	14	19	160
Jacobson 1	SW	35	14	18	135
Jacobson 2	SE	35	14	18	135
Jacobson 4	NE	26	14	18	135
Jacobson SW	SW	27	14	18	135
Jacobson SE	SW	27	14	18	135
Jacobson 3	NW	26	14	18	135
Brumelhuis	NW	12	15	17	160
Skretting	NW	16	14	17	130
Rob Wiest	SE	16	15	18	160

1710

Brown Soil Dryland

PW1	NW	35	12	19	160
PW2	SE	35	12	19	160
BOS 1	SW	18	13	18	160
L3	SW	4	13	18	160
Richard	NE	2	12	19	160
CP1	NE	15	12	18	160
DW 1	NW	16	13	17	157
DW2	NW	4	13	19	160

1277

Name Serfas Land Company Inc
Address
Legal Land
Location Sec 2-15-18 W4

MDS Spreadsheet based on 2006 AOPA Regulations

Category of Livestock	Type of Livestock	Factor A	Technology Factor	MU	LSU Factor	Number of Animals	LSU
Feedlot Animals	Beef Cows/Finishers (900+ lbs)	0.700	0.700	0.910	0.4459	55,000	24,524.5
	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	0.1365	-	-
	Mules	0.600	0.700	1.000	0.4200	-	-
	Donkeys	0.600	0.700	0.670	0.2814	-	-
	Bison	0.600	0.700	1.000	0.4200	-	-
Dairy (*count lactating cows only)	Other					-	-
	Free Stall – Lactating Cows with all associated dries, heifers, and calves*	0.800	1.100	2.000	1.7600	-	-
	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	-	-
Swine Liquid (*count sows only)	Calves (< 350 lbs)	0.800	0.700	0.200	0.1120	-	-
	Other					-	-
	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	-	-
	Other					-	-
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	-	-
	Other					-	-
	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	-	-
Poultry	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	-	-
	Other					-	-
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/Billies	0.700	0.700	0.140	0.0686	-	-
	Goats - Feeders	0.700	0.700	0.077	0.0377	-	-
	Other					-	-
	Elk	0.600	0.700	0.600	0.2520	-	-
Cervid	Deer	0.600	0.700	0.200	0.0840	-	-
	Other					-	-
	Wild Boar					-	-
Wild Boar	Feeders	2.000	0.800	0.140	0.2240	-	-
	Sow (farrowing)	2.000	0.800	0.371	0.5936	-	-
	Other					-	-

Total 24,524.5

For New Operations

Dispersion Factor 1

Category	Odour Objective	Distance	
		Feet	Metres
1	41.04	5,388	1,642
2	54.72	7,183	2,190
3	68.4	8,979	2,737
4	109.44	14,367	4,379

For Expanding Operations

Dispersion Factor 1
Expansion Factor 0.77

Category	Odour Objective	Distance	
		Feet	Metres
1	41.04	4,148	1,264
2	54.72	5,531	1,686
3	68.40	6,914	2,107
4	109.44	11,063	3,372

Name Serfas Land Company Inc
Address
Legal Land
Location Sec 2-15-18 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)	55000.0	6875.0	5720.0	4290.0	3410.0
	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
	Other	0.0				
Dairy (*count lactating cows only)	Free Stall – Lactating Cows with all associated dries, heifers, and calves*	0.0	0.0	0.0	0.0	0.0
	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
Swine Liquid (*count sows only)	Other	0.0				
	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
Swine Solid (*Count sows only)	Other	0.0				
	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
Poultry	Other	0.0				
	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 - (Belt 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
Goats and Sheep	Geese	0.0	0.0	0.0	0.0	0.0
	Other	0.0				
	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
Cervid	Goats - Feeders	0.0	0.0	0.0	0.0	0.0
	Other	0.0				
	Elk	0.0	0.0	0.0	0.0	0.0
Wild Boar	Deer	0.0	0.0	0.0	0.0	0.0
	Other	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
	Other	0.0				

Total Hectares	6,875	5720.0	4290.0	3410.0
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Total Acres	16,988	14134.1	10600.6	8426.1
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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)

RUNOFF CONTROL CATCH BASIN: Compacted soil liner

(complete a copy of this section for **EACH proposed** runoff control catch basin with a compacted soil liner)

Facility description / name (as indicated on site plan)

1. Lagoons 1-6

2.

3.

Determination of runoff area

Provide a plan and show how you calculated the area contributing to runoff for each catch basin

Please see attached drawing as well as attached calculator. Each lagoon will be widened by 7m to accomodated extra runoff

Clay liner material is medium plastic clay

Laboratory permeability test report attached.

Natural Soils are silty/sand low plastic clay; ground water below +3.9m BGL

6 basins all the same size

Catch basin capacity

	Length (m)	Width (m)	Depth (m)	Depth below ground level (m)	Slope run:rise			NRCB USE ONLY Calculated storage capacity (excl. 0.5 m freeboard) (m ³)
					Inside end walls	Inside side walls	Outside walls	
1.	126	40	4	3.5	3:1	3:1	N/A	
2.								
3.								
TOTAL CAPACITY								

Compacted soil liner details

Thickness of compacted soil liner	0.6 (m)	Provide details (as required) compacted clay liner; material from original grading of feedlot	
Soil texture	% sand	% silt	% clay
Atterberg limits	Plastic limit	Liquid limit	Plasticity index
Hydraulic conductivity	Hydraulic conductivity (cm/s) 8.52E-09 cm/s		
	Describe test standard used Laboratory Test (falling-head test)		

Catch Basin – Design and management requirements can be found in
Technical Guideline Agdex 096-101

NRCB USE ONLY

Requirements met: ☐ YES ☐ NO

Condition required: ☐ YES ☐ NO

Report attached: ☐ YES ☐ NO

Catch Basin Storage Volume Calculator

AO Comment: Calculation for 1 expanded catch basin, applicant proposing to expand all 6 catch basins to the same size.

Construction Dimensions of Catch Basin

* Only cells in blue can be changed.

Overall Dimensions of Catch Basin

Total Length* ₄	126.0 m
Total Width* ₄	40.0 m
Total Depth* ₄	4.0 m
Design Capacity Depth	3.50 m
End Slope* ₄	3 run:rise
Side Slope* ₄	3 run:rise
Length of Bottom	102.0 m
Width of Bottom	16.0 m

Capacity @ top of Bank 12,960 m³

Design Capacity of Catch Basin (freeboard level)

Length (design capacity depth)	123.0 m
Width (design capacity depth)	37.0 m
Total Depth	4.0 m
Design Capacity Depth	3.50 m
End Slope	3 run:rise
Side Slope	3 run:rise

Design Capacity (freeboard level) 10,563 m³

level) 4,551 m²

Catch Basin Dimensions

413 ft
131 ft
13 ft
11 ft
3 run:rise
3 run:rise
335 ft
52 ft

Capacity (@top)
457,678 ft³
2,850,800 Imp. Gal.

Design Capacity (freeboard level)

404 ft
121 ft
13 ft
11 ft
3 run:rise
3 run:rise

373,029 ft³
2,323,534 Imp. Gal.
48,987 ft²

CFO Name ₁ Serfas Enchant

Land Location ₁ 2-15-18

Paved Runoff Catchment Area(s)

Area ₂	Length (m)	Width (m)	Area (m ²)
1	849	843	715,282.5
2			0.0
3			0.0
4			0.0
5			0.0
Total Area (m ²)			715,283

Unpaved Runoff Catchment Area(s)

Area ₂	Length (m)	Width (m)	Area (m ²)
6			0.0
7			0.0
8			0.0
9			0.0
10			0.0
Total Area (m ²)			0

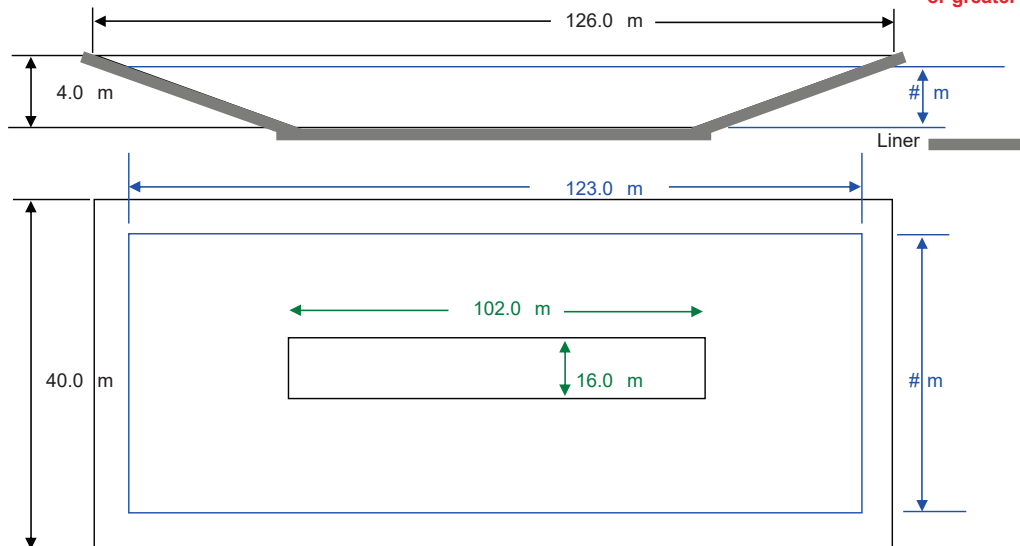
Rainfall (Select Town ₃)

Vauxhall 85
AOPA Design Rainfall 85 mm

Minimum Catchbasin Storage Volume Required

60,799 m ³ **	2147096.86 ft ³
	13373907.8 Imp. Gal.

** Design capacity of catch basin should be equal to or greater than, minimum storage volume required.



Lines in Black - Overall catch basin dimensions
Lines in Blue - Design capacity depth dimensions (excludes freeboard)

NTS - Not To Scale

wood.

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CHILAKO DRILLING SERVICES LTD

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

*Review Serfas NE2-15-19
403 345-3710*

SOIL PROFILE AND PARENT MATERIAL DESCRIPTION

Site Location: NE2-15-W4, Serfas Farms

Date: 18-Dec-19

Hole #	Location	Depth	Texture	Moisture	Geological	Sample	Remarks
KS1-19	0402513	0-0.15	CL	F	Topsoil		
	5565616	0.15-1.0	CL	M	Till		Stiff, med plastic, yellow brown, fractured
		1.0-1.8	CL	M	Till		Stiff, med plastic, brown, fractured
		1.8-3.0	CL	M	Till		Stiff, med plastic, brown, fractured
KS2-19	0402289	0-0.15	CL	F	Topsoil		Stiff, med plastic
	5565629	0.15-1.5	CL	M	Till		Stiff, med plastic, brown, fractured
		1.5-3.0	CL	M	Till		Stiff, med plastic, brown, grayish brown areas fractured
KS3-19	0402098	0-0.15	CL	F	Topsoil		
	5565631	0.15-1.1	CL	M	Till		Firm, med plastic, brown, fractured
	depressional area	1.1-2.5	CL	VM-Sat	Till		Soft, med plastic, brown, fractured
		2.5-3.0	CL	M	Till		Stiff, med plastic, brown, fractured
KS4-19	0402040	0-0.15	CL	F	Topsoil		
	5565470	0.15-0.4	CL	M	Till		Stiff, med plastic, brown, fractured
		0.4-1.2	CL	SM	Till		Stiff, med plastic, brown, fractured
		1.2-3.0	CL	M	Till		Stiff, med plastic, brown, fractured
KS5-19	0402272	0-0.15	CL	F	Topsoil		
	5565423	0.15-0.7	CL	D	Till		Stiff, med plastic, brown, fractured
		0.7-0.8	CL	D	Till		Stiff, med plastic, brown, trace gravel
		0.8-3.0	CL	M	Till		Stiff, med plastic, brown, fractured 50mm H.C. well installed to 3.0m Screen: 3.0-1.5m Sand: 3.0-1.4m Bentonite: 1.4-0.0m Stickup: 0.6m Hole Diameter: 0.15m
KS5a-19		2.2-3.0	CL	M	Till		Sand lenses, fractured 50mm H.C. well installed to 3.0m Screen: 3.0-2.1m Sand: 2.1-1.1m Benonite: 1.1-0.0m Stickup: 0.3m Hole Diameter: 0.15m
KS6-19	0402480	0-0.15	CL	F	Topsoil		
	5565418	0.15-0.5	CL-SICL	M	Till		Stiff, med plastic, brown, fractured
		0.5-2.0	CL	M	Till		Stiff, med plastic, brown, fractured

		2.0-2.4	SiCL	M	Till	V. firm, med plastic, yellow brown, fractured
		2.4-3.0	CL	M	Till	Stiff, med plastic, brown, fractured
KS7-19	0402322	0-0.15	CL	F	Topsoil	
	5565270	0.15-1.0	CL	SM	Till	Stiff, med plastic, brown, some silt, fractured
	Knoll	1.0-3.0	CL	M	Till	Stiff, med plastic, brown, fractured
		3.0-4.5	CL	M	Till	Stiff, med plastic, yellow brown, oxidized fractured
KS8-19	0402152	0-0.15	CL	F	Topsoil	
	5565274	0.15-1.3	CL	M	Till	Stiff, med plastic, brown, fractured
		1.3-1.6	CL-SiCL	SM	Till	Stiff, med plastic, yellow brown, trace sand
		1.6-4.5	CL	M	Till	Stiff, med plastic, brown, fractured
KS9-19	0401901	0-0.15	CL	F	Topsoil	
	5565280	0.15-1.2	CL	M	Till	Stiff, med plastic, brown, fractured
	Low area	1.2-1.5	CL	SM	Till	Stiff, med plastic, brown, silt lenses
		1.5-3.0	CL	M	Till	Stiff, med plastic, brown, fractured
KS10-19	0401910	0-0.15	CL	F	Topsoil	
	5565154	0.15-1.1	CL	M	Till	Stiff, med plastic, brown, fractured
		1.1-1.4	VFSCl	M	Till	V. firm, low plastic, yellow brown, fractured
		1.4-3.0	CL	M	Till	Stiff, med plastic, brown, fractured
KS11-19	0402130	0-0.15	CL	F	Topsoil	
	5565196	0.15-1.0	CL	D	Till	Stiff, med plastic, light brown, trace gravel
		1.0-1.6	CL	M	Till	Stiff, med plastic, brown, trace sand
		1.6-3.0	CL	M	Till	Stiff, med plastic, brown, fractured
						50mm H.C. well installed to 3.0m
						Screen: 3.0-1.5m
						Sand: 3.0-1.4m
						Bentonite: 1.4-0.0m
						Stickup: 0.6m
						Hole Diameter: 0.15m
KS12-19	0402332	0-0.15	CL	F	Topsoil	
	5565187	0.15-1.2	CL	SM	Till	Stiff, med plastic, brown, fractured
		1.2-3.0	CL	M	Till	Stiff, med plastic, brown, oxidized, fractured
KS13-19	0402574	0-0.15	CL	F	Topsoil	
	5565179	0.15-1.0	CL	SM	Till	Stiff, med plastic, brown, fractured
		1.0-1.5	CL	SM	Till	Stiff, med plastic, brown, fractured
		1.5-3.0	CL	M	Till	Stiff, med plastic, yellow brown, oxidized fractured
KS14-19	0401744	0-0.15	CL	F	Topsoil	
	5564831	0.15-0.6	CL-SiCL	M	Lac	
		0.6-1.5	CL	M	Lac	Stiff, med plastic, brown
		1.5-3.9	M.SL	M	Lac	Loose, yellow brown
		3.9-6.3	M.SL	Sst	Lac	Free water @ 3.9m
		6.3-7.6	C	M	Till	Stiff, med-high plastic, dark gray, basal till

KS15-19	0401663 5564910	0-0.15	CL	F	Topsoil	fractured Free water @ 1.7m Stiff, med plastic, brown, fractured Stiff, med-high plastic, gray, fractured Soft, low plastic, gray, sand lenses, fractured
		0.15-1.2	SiCL-CL	SM	Lac	
		1.2-1.7	M.SL	M	Lac	
		1.7-3.0	M.SL	Sat	Lac	
		3.0-3.6	CL	M	Till	
		3.6-4.2	CL	M	Till	
		4.2-4.5	SCL	Sat	Till	
KS16-19	0401807 5564855	0-0.15	CL	F	Topsoil	Sand layers Free water @ 3.9m, Sat SiL layers
		0.15-1.9	CL-SCL	SM	Lac	
		1.9-2.6	SiCL	M	Lac	
		2.6-3.9	M.SL	M	Lac	
		3.9-4.8	FSL	Sat	Lac	
KS17-19	0402542 5565268	0-0.15	CL	F	Topsoil	Stiff, med plastic, brown, fractured Stiff, med plastic, brown, fractured Stiff, med plastic, brown, fractured
		0.15-1.9	CL	M	Till	
		1.9-2.3	CL-SiCL	M	Till	
		2.3-3.0	CL	M	Till	
KS18-19	0402397 5565165	0-0.15	CL	F	Topsoil	V. firm, med plastic, brown, fractured V. firm, low-med plastic, brown, fractured V. firm, low plastic, brown, fractured Stiff, med plastic, brown, fractured Stiff, low plastic, brown, fractured
		0.15-0.6	FSCL	M	Till	
		0.6-0.8	CL	M	Till	
		0.8-1.3	CL	M	Till	
		1.3-1.5	FSCL	M	Till	
		1.5-2.6	CL	M	Till	
		2.6-3.0	FSCL	M	Till	
KS19-19	0402502 5505219	0-0.15	CL	F	Topsoil	V. firm, yellow brown Stiff, med plastic, brown, fractured
		0.15-0.4	CL	D	Lac	
		0.4-1.3	FSCL	D	Lac	
		1.3-2.4	SiCL	M	Lac	
		2.4-3.0	CL	M	Till	
KS20-19	0402185 5565220	0-0.15	CL	F	Lac	Sand layer at till contact Stiff, med plastic, fractured, iron staining 50mm H.C. well installed to 5.4m Screen: 5.4-3.9m Sand: 5.4-3.8m Bentonite: 3.8-0.3m Stickup: 0.7m Hole Diameter: 0.15m
		0.15-0.7	SiCL	D	Lac	
		0.7-1.4	FSCL	D	Lac	
		1.4-5.4	CL	M	Till	

Legend: L Loam
C Clay
S Sand
Gr. Gravel
Si Silt

Write a description for your map.

Feature 2

KS3-19 ° KS2-19 ° KS1-19
KS4-19 KS5-19 □ KS6-19
KS9-19 KS8-19 KS7-19 ° KS17-19
KS11-19 □ KS20-19 KS19-19 ° KS12-19 KS18-19 KS13-19
KS10-19 °

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5-19 ° KS14-19 KS16-19