



Application for Amendment

Application under the *Agricultural Operation Practices Act* to amend a permit for a confined feeding operation, manure collection area and/or manure storage facility(ies). ("Permit" means an NRCB-issued or grandfathered approval, registration, or authorization, including a grandfathered municipal development permit.)

NRCB USE ONLY		NRCB Application number	Date Stamp
<input checked="" type="checkbox"/> Approval	<input type="checkbox"/> Registration	<input type="checkbox"/> Authorization	NRCB APPLICATION 22 APR 25 RECEIVED
		LA24011A	

CONTACT INFORMATION

Applicant Information			
Name: Anthony Trower		Corporate Name (if applicable): Trower Calf Ranch	
Address: (Street/P.O. Box) Box 58			
City/Town: Iron Springs		Province: AB	Postal Code: T0K 1G0
Agent consent (if applicable)			
I, _____, hereby give consent for _____ (name of applicant) (name of agent and company)			
to act on my behalf or as my agent for this application.			
Signed this _____ day of _____, 20____.			
			Signature of Applicant

LOCATION OF DEVELOPMENT

Which permit do you wish to amend? (List permit number and issuing agency.)	LA24011
Legal Land Description(s)	NW 20-11-20 W4 (Qtr-Sec-Twp-Rg-W Mer)

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 herein and acknowledge that the information provided in this application is true to the best of my knowledge.

April 9th 2025
Date of signing
Trower Calf Ranch
Corporate name (if applicable)

[Redacted Signature]
Signature
A. Trower
Print name

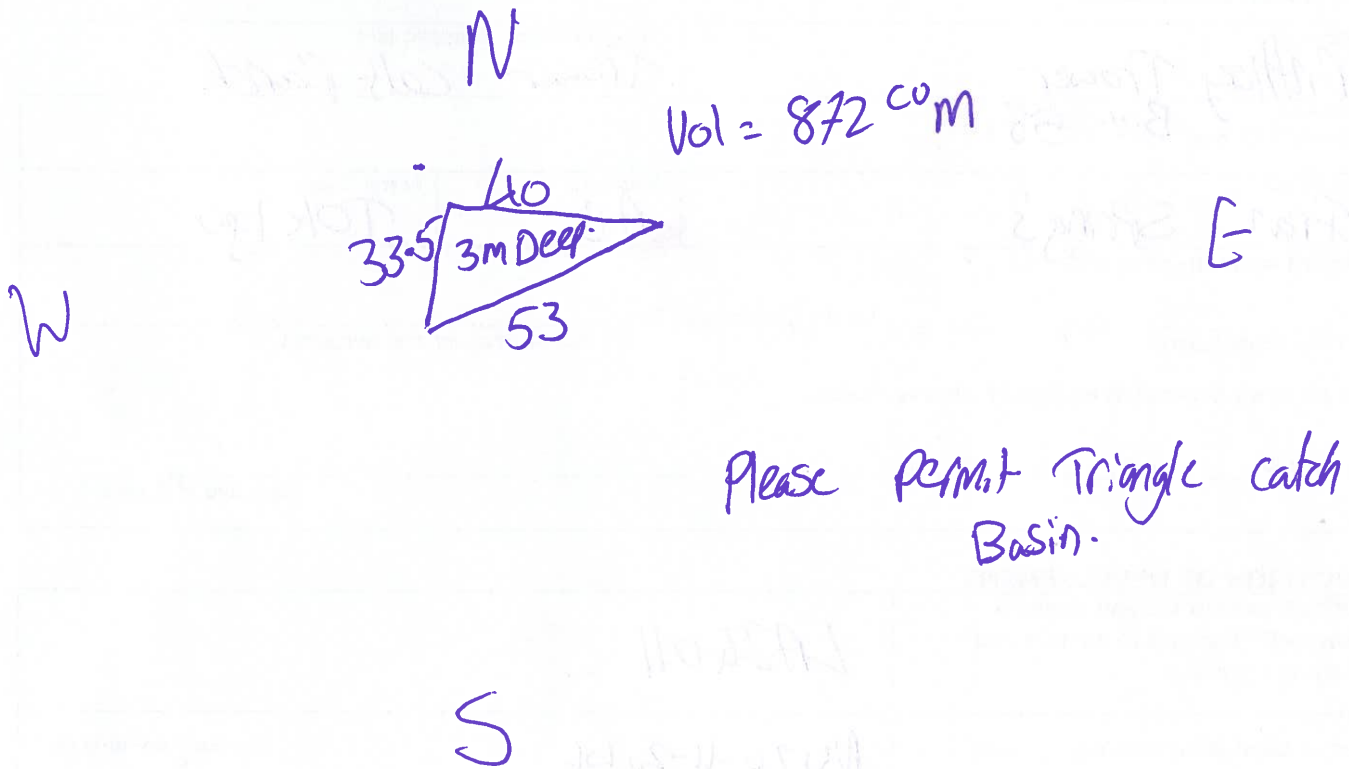
Application for Amendment – contd.

AMENDMENT INFORMATION REQUIREMENTS

Instructions:

For each part of your permit that you would like amended, please detail what change you would like made and why, and how your proposed change will meet the AOPA requirements. You may attach additional pages to this form to provide this information.

Please note that an approval officer may require a page (or pages) of the Part 2 application forms to be completed as part of this application for amendment, depending on what changes are proposed.

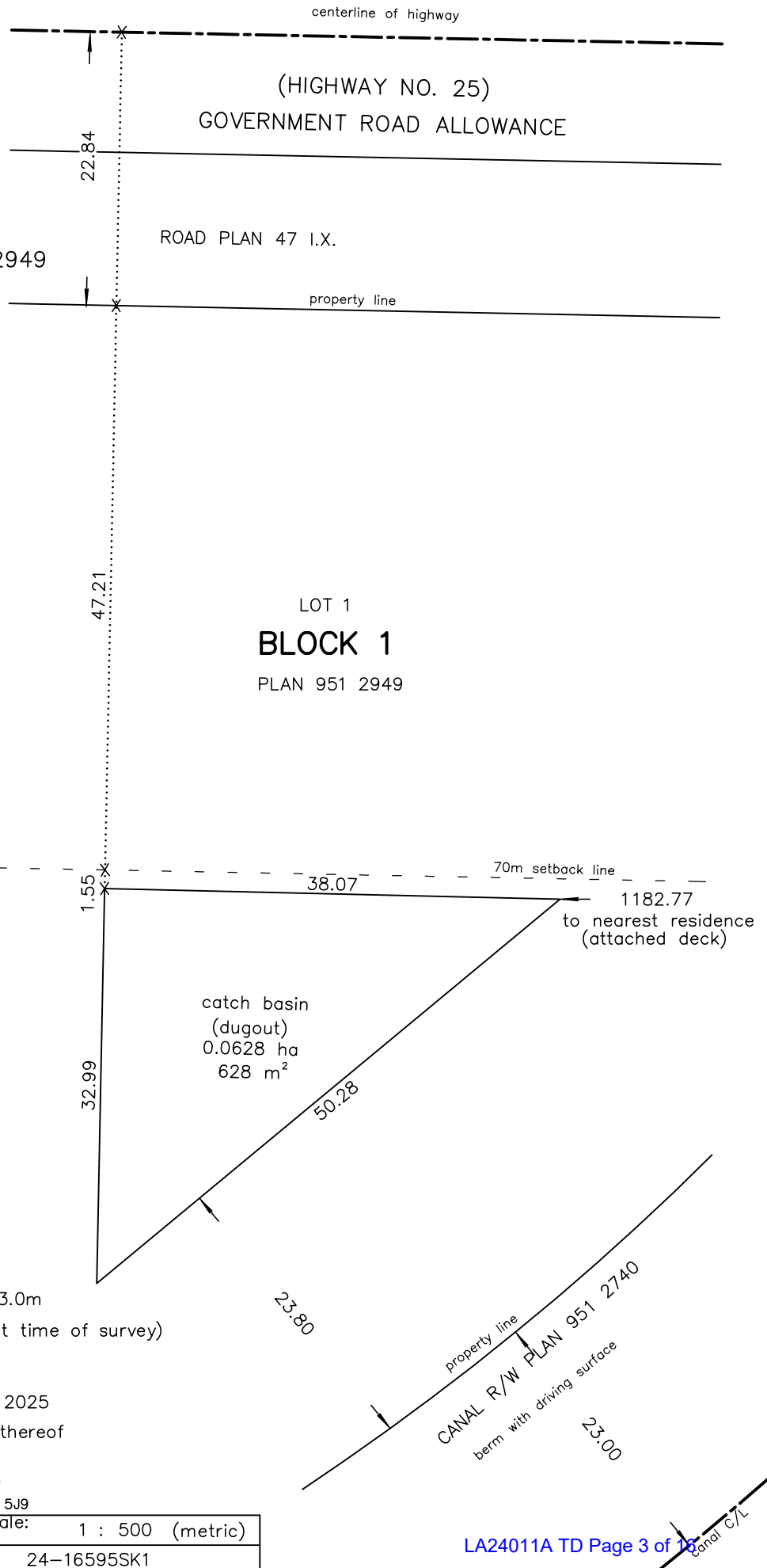


AO note: Approval LA24011 permitted the construction of a rectangular catch basin with the dimensions of 40 m x 12 m x 2 m deep. During a post construction inspection, it was noticed that the catch was constructed in the proposed location, but is triangular with the dimensions of 33 m x 38 m x 50 m x 3 m deep*. This application for amendment seeks to permit the constructed catch basin.

*These dimensions are the surveyed dimensions as provided in the attached report from Brown Okamura & Associates Ltd. These dimensions differ slightly from the dimensions in the diagram above and will be used in the LA24011A decision summary and permit.

SKETCH PLAN
OF
DUGOUT

LOT 1, BLOCK 1, PLAN 951 2949
LETHBRIDGE COUNTY



Field Survey completed November 6th, 2025
Distances are in metres and decimals thereof

brown okamura & associates ltd.

2830 - 12 Avenue North, Lethbridge, Alberta, T1H 5J9

Drawn: MJ	Checked: DJA	Scale: 1 : 500 (metric)
Date: NOVEMBER 21, 2024	JOB	24-16595SK1

VOLUME REPORT

Report created by Teunis Tichelaar
Report created on the 04.04.2025 — 18:01:03

PROJECT DETAILS

<i>Project Name</i>	ANTHONY T	<i>Distance Units</i>	Meter
<i>Description</i>	DAIRYFARM	<i>Area Units</i>	US ft ²
<i>Job</i>	EFFICIENT_DESIGN2SWALE	<i>Volume Units</i>	m ³

VOLUME DETAILS

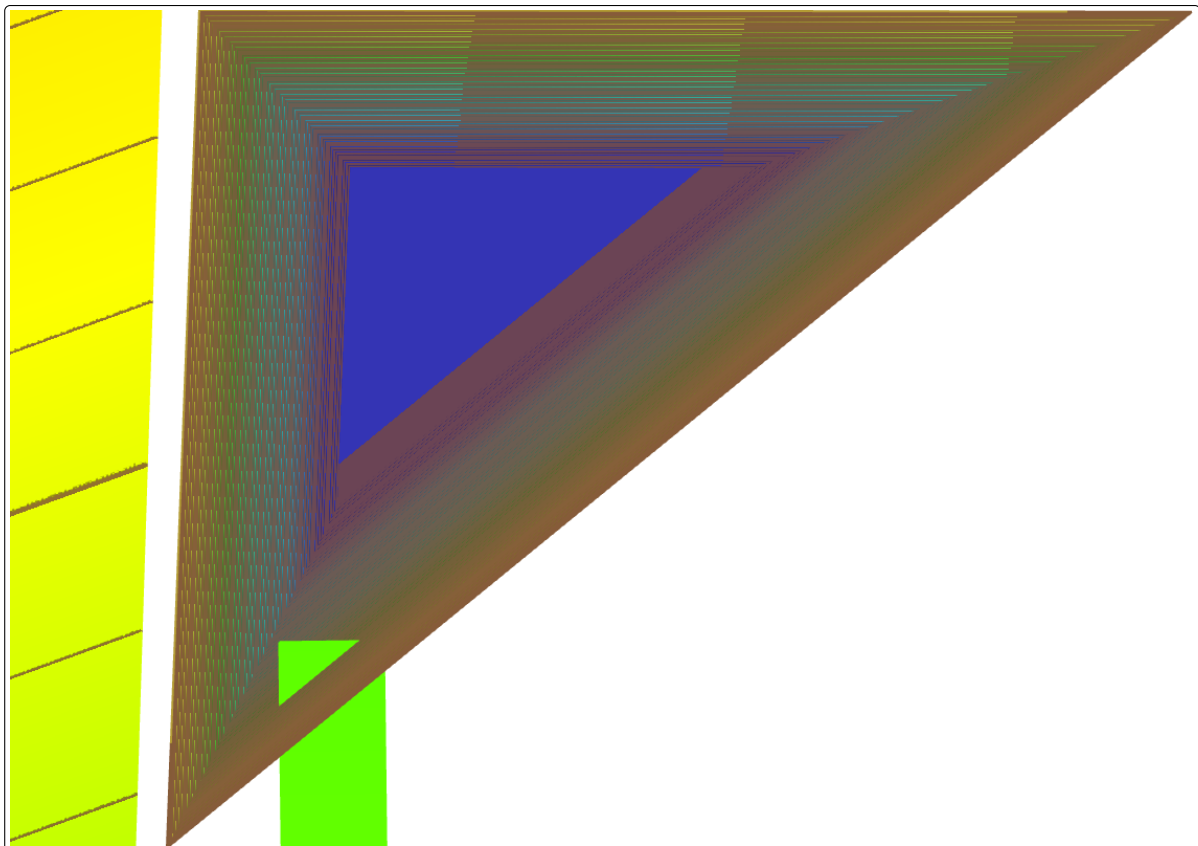
<i>Name</i>	Trower calf ranch pond volume	<i>Calculated Volume</i>	952.021 ↑
<i>Type</i>	Stockpile	<i>Corrected Volume</i>	952.021 ↑

SURFACE DETAILS

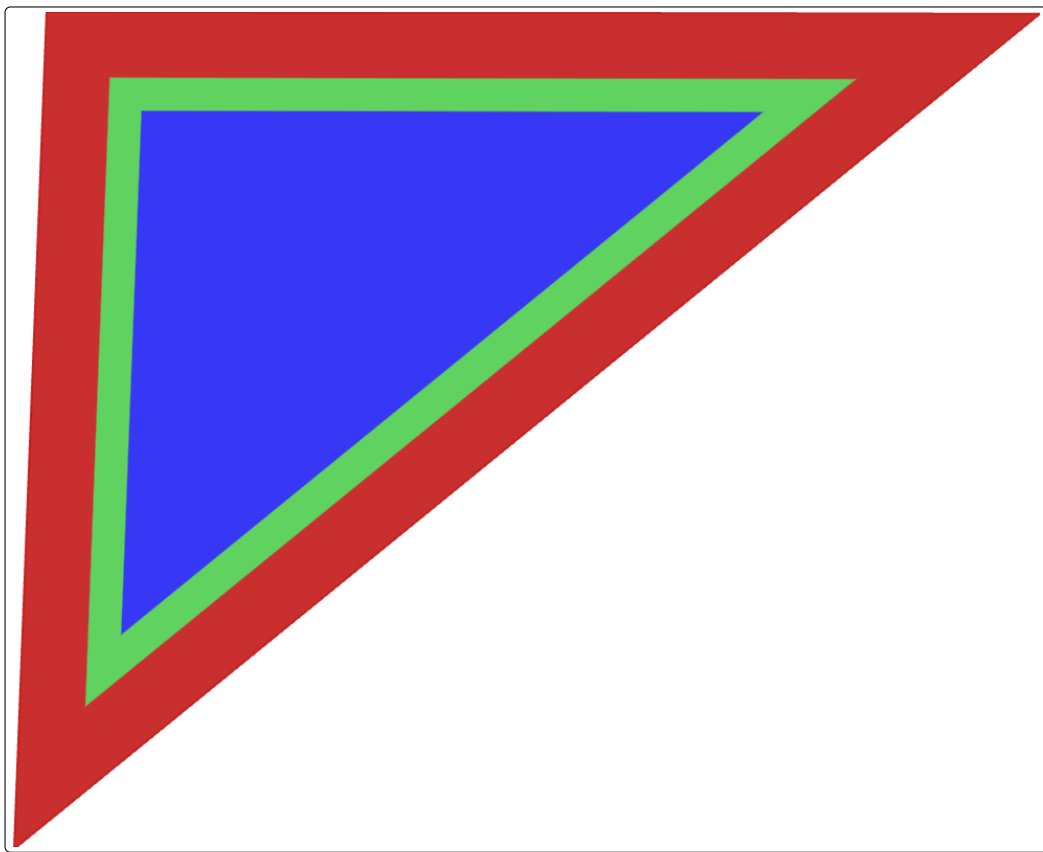
EXISTING SURFACE

<i>Surface Name</i>	PROJECTED POND 2—1.TRM	<i>Max Elevation</i>	877.100	<i>No. Surface Pts ¹</i>	3
<i>Slope Area</i>	7180.06	<i>Min Elevation</i>	874.100	<i>No. Boundary Pts ²</i>	3
<i>Flat Area</i>	6534.93	<i>Balanced Site</i>	875.532	<i>Perimeter</i>	120.513

SURFACE IMAGES



2D View



Cut/Fill Map View

NOTES

- ¹ No. of Surface Points
- ² No. of Boundary Points
- ↑ Fill



Understanding construction.

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: Naturally occurring protective layer (cont.)

NRCB USE ONLY

Catch basin calculator. Total volume @ freeboard level: 797 m3 Runoff capacity requirements met: ☒ YES ☐ NO
Calculation of the volume attached: ☒ YES ☐ NO Only the group hutches have an outdoor, uncovered area (127 x 23).
A 1-in-30 year rainfall would produce 149 m3 of manure contaminated run off.

Depth to water table: > 6 mbgs Requirements met: ☒ YES ☐ NO

Depth to uppermost groundwater resource: > 6 mbgs Requirements met: ☒ YES ☐ NO

ERST completed: ☒ See ERST page for details

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

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

Catch Basin Storage Volume Calculator

Construction Dimensions of Catch Basin

* Only cells in blue can be changed.

Overall Dimensions of Catch Basin

Total Length* ₄	33.0 m
Total Width* ₄	38.0 m
Total Depth* ₄	3.0 m
Design Capacity Depth	2.50 m
End Slope* ₄	3 run:rise
Side Slope* ₄	3 run:rise
Length of Bottom	15.0 m
Width of Bottom	20.0 m

Capacity @ top of Bank 2,169 m³

Design Capacity of Catch Basin (freeboard level)

Length (design capacity depth)	30.0 m
Width (design capacity depth)	35.0 m
Total Depth	3.0 m
Design Capacity Depth	2.50 m
End Slope	3 run:rise
Side Slope	3 run:rise

Design Capacity (freeboard level) 1,594 m³

level) 1,050 m²

Catch Basin Dimensions

108 ft
125 ft
10 ft
8 ft
3 run:rise
3 run:rise
3 run:rise
49 ft
66 ft

Capacity (@top)

76,598 ft³
477,113 Imp. Gal.

Design Capacity (freeboard level)

98 ft
115 ft
10 ft
8 ft
3 run:rise
3 run:rise
3 run:rise

56,283 ft³
350,576 Imp. Gal.
11,302 ft²

CFO Name ₁

Land Location ₁

Paved Runoff Catchment Area(s)

Area ₂	Length (m)	Width (m)	Area (m ²)
1			0.0
2			0.0
3			0.0
4			0.0
5			0.0
Total Area (m ²)			0

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

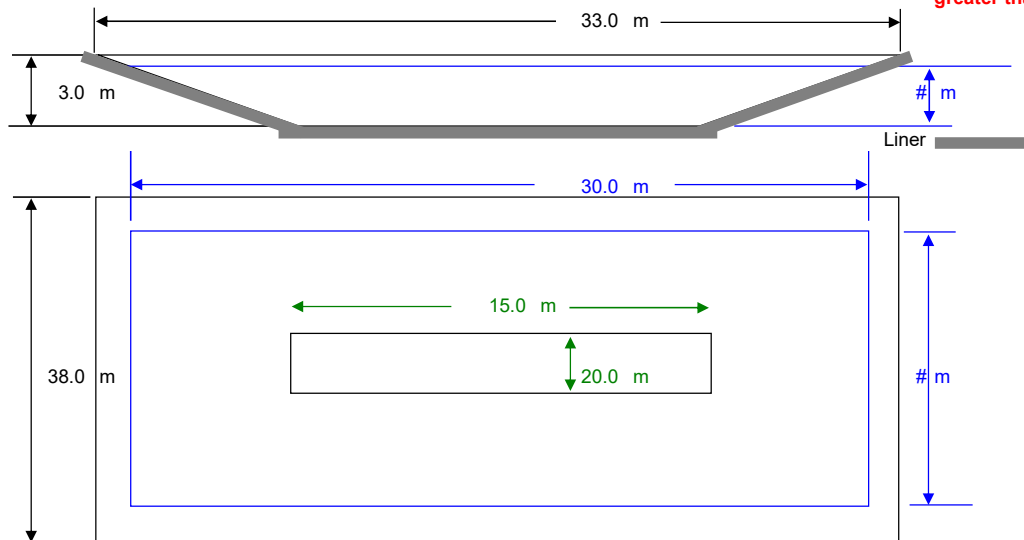
Rainfall (Select Town ₃)

Coaldale 85
AOPA Design Rainfall 85 mm

Minimum Catchbasin Storage Volume Required

0 m³ ** 0 ft³
0 Imp. Gal.

** Design capacity of catch basin should be equal to, 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

This calculation provides the volume of a rectangular catch basin. The constructed catch basin is a right-triangle, and thus will have a capacity of half this volume (797 m³).

10 May 2024

J Lobbezoo Engineering & Consulting Services Ltd.

PO Box 96, Monarch, AB T0L1M0

JLECS File: P24015

Trower Calf Ranch
PO Box 58
Iron Springs, Alberta T0L1G0

Attention: Mr. Anthony Trower

**Re: Geotechnical Review and Evaluation
 NRCB Permitting of Proposed Catch Basin
 NW-20-011-20-W4M, near Iron Springs, Alberta**

As requested, J Lobbezoo Engineering & Consulting Services Ltd. (JLECS) has carried out a geotechnical review and evaluation of the above-captioned site relative to the required protection of the groundwater resource, as required by the Agricultural Operation Practices Act, AB Reg. 267/2001 (hereinafter referred to as "AOPA"). This letter describes site soil conditions to support a permit application related to a proposed catch basin to be located near the east side of the calf ranch property located within the northwest corner area of NW-20-011-20-W4M (refer to Figure 1, attached).

In order to demonstrate the suitability of the naturally existing soils for consideration as a naturally occurring protective layer to the groundwater, two boreholes were advanced at the site on May 6, 2024. The boreholes were advanced at the approximate locations denoted as BH24-01 and BH24-02 on Figure 1, attached.

The boreholes were advanced by a truck-mounted drill rig owned and operated by Chilako Drilling Services and extended to a depth of 6.1 m below the existing grade. The boreholes were logged by JLECS.

In general, the natural mineral soils encountered in the boreholes consisted of a layer of low to medium plastic lacustrine clay (to approximately 1.5 m depth) which was underlain by stiff medium plastic clay till to the termination depth of the two boreholes. No evidence of free groundwater or a groundwater resource (as defined by the AOPA) was identified within the 6.1 m investigation depth at the proposed catch basin site.

A sample of soil collected from the screened zone of borehole BH24-01 as well as a sample from the same depth at borehole BH24-02 were subjected to grain size analyses, which was carried out by Down to Earth Laboratories in Lethbridge, Alberta. The results indicate a soil texture breakdown of:

Table 1: Soil Texture Analyses

Borehole/Depth	% Sand	% Silt	% Clay
BH24-01 / 5.5 m	27	25	48
BH24-02 / 5.5 m	33	29	38

To measure the *in situ* permeability of the subsurface soils, a 50 mm diameter PVC monitoring well was constructed in borehole BH24-01. The test well was screened from 4.5 m to 6.1 m depth. Well saturation of the 50 mm diameter monitoring well was carried out by filling the monitoring well to the top for

several consecutive days. After several days of testing, a 48-hour water drop of 0.58 m was determined at BH24-01.

To calculate the permeability of the screened portion of the clay till strata at the test well location, a modified falling head test (as outlined in the USBR Engineering Geology Field Manual Volume 2 [2001]) was used. The input variables and output data are outlined on the attached In Situ Permeability Test report. The results of the permeability testing indicate an *in situ* hydraulic conductivity, k_s , of 2.2×10^{-8} cm/s at BH24-01.

Using the measured permeability of the clay stratum, the 1.6 m of clay screened at BH24-01 is estimated to represent the equivalent of approximately 73 m of naturally occurring materials having a hydraulic conductivity of 1×10^{-6} cm/s (the reference standard in AOPA). This represents natural material protection in excess of the minimum requirements outlined by the AOPA for catch basins (minimum 5 m, Section 9.5-b).

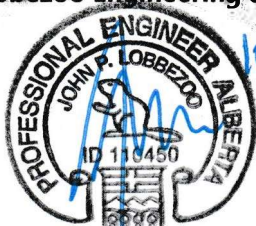
Conclusion

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

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

Yours truly,

J Lobbezoo Engineering & Consulting Services Ltd.



John Lobbezoo, P.Eng.
Principal Geotechnical Engineer

Attachments

Figure 1 Borehole Locations
In Situ Permeability Test Calculations
Borehole Summary Table

PERMIT TO PRACTICE	
J LOBBEZOO ENGINEERING & CONSULTING SERVICES LTD.	
RM SIGNATURE: _____	_____
RM APEGA ID #: _____	110450
DATE: _____	10 May 2024
PERMIT NUMBER: P016456	
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)	



Credit: Google Image (2024)

Figure 1: Borehole Locations

Proposed Catch Basin

BH24-01

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)

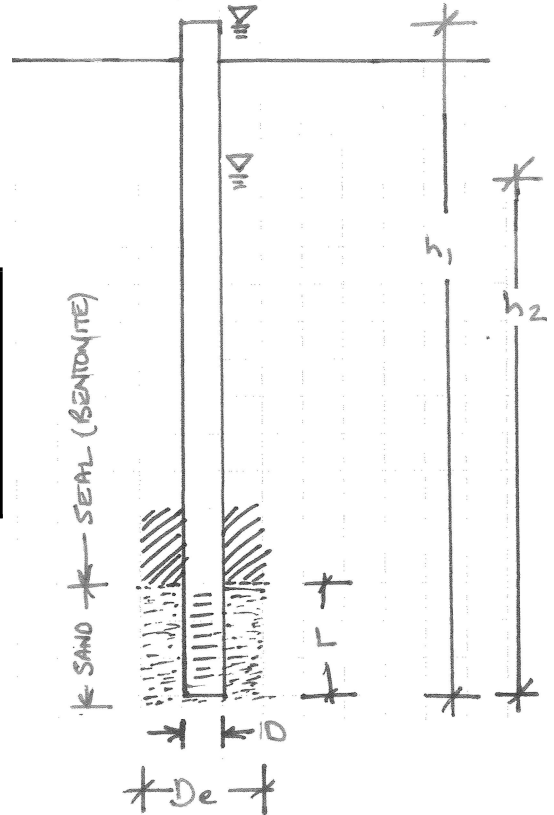
BH24-01 - Trower Calf Ranch

JLECS File: P24015

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	6.70	initial height of water above base of hole (m)
h2	6.12	final height of water above base of hole (m)
t	48.0	time of test (h)

$$k_s = 2.2E-08 \text{ cm/sec}$$



Borehole Summary Table

JLECS File: P24015

Project: Trower Calf Ranch, Proposed Catch Basin, NW-20-011-20-W4M

Date of Drilling: May 6, 2024

BH24-01		
Depth (m): 0.0 – 1.6	CLAY – lacustrine, low to medium plastic, silty, trace sand, brown, moist, firm to stiff	<u>Test Well Details</u> 50mm diameter <u>Screen:</u> 4.6 to 6.1m <u>Backfill</u> Sand: 4.5 to 6.1m Bentonite: 1.5 to 4.5m Drill Cuttings: 0 to 1.5m <u>Stickup:</u> 0.6m
1.6	CLAY TILL – medium plastic, trace sand, trace gravel, coal & oxide inclusions, stiff to very stiff, moist, brown	
6.1	End of Borehole at 6.1 m depth <i>-borehole open and dry upon completion</i>	

BH24-02		
Depth (m): 0.0 – 1.4	CLAY – lacustrine, low to medium plastic, silty, trace sand, light brown, damp, stiff	
1.4	CLAY TILL – medium plastic, trace sand, trace gravel, coal & oxide inclusions, stiff to very stiff, moist, brown	
6.1	End of Borehole at 6.1 m depth <i>-borehole open and dry upon completion</i> <i>-borehole backfilled with drill cuttings upon completion</i>	

Table Notes:

- borehole information to be read in conjunction with JLECS report P24015.
- boreholes drilled on May 6, 2024, using a truck-mounted drill operated by Chilako Drilling Services Ltd.
- see Figure 1 for borehole locations

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
Catch basin	Low	Low	LA24011A

ERST for **existing** facilities

Facility	Groundwater score	Surface water score	File number
Calf hutch/group hutch area	Low	Low	LA24011
Calf barn	Low	Low	LA24011

ERST related comments:

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)

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WATER WELL AND SURFACE WATER INFORMATION

Well IDs: 241705 - has been decommissioned

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



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)

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MINIMUM DISTANCE SEPARATION

Methods used to determine distance (if applicable): Aerial imagery

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

Requirements (m): Category 1: 408 Category 2: 543 Category 3: 679 Category 4: 1087

Technology factor: ☐ YES ☒ NO

Expansion factor: ☐ YES ☒ NO

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

One MDS waiver was submitted with application LA24011. A new MDS waiver is not required as the catch basin was constructed within the permitted footprint.

The county notified me of one residential permit for a dwelling on the same quarter as the CFO (NW 20-11-20). The catch basin was constructed within the permitted footprint, therefore an MDS waiver is not required.

LAND BASE FOR MANURE AND COMPOST APPLICATION

Land base required: _____

Land base listed: _____

Area not suitable: _____

Available area: _____

Adequate land for spreading manure was provided in Application LA24011. This does not need to be reassessed in this application for amendment.

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 _____

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

April 9, 2025	

CORRESPONDENCE WITH MUNICIPALITIES AND REFERRAL AGENCIES

Date deeming letters sent: May 6, 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: LNID, ATCO, Lethbridge North County Potable Water Coop ☐ N/A

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

Other: _____ ☐ N/A

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