



Platinum Member - Canada's Best Managed Companies

Our Vision

We will be the BEST Canadian Food Company in the World

Core Values

- Teamwork
- **Do What We Say, Say What We Do**
- **Open Door Policy**
- **Respecting People**
- **Respecting Animals**
- **Turning** Challenges into Opportunities
- **Empowering People**
- **Striving to be the Best**
- **Community Partners**
- **Get 'er Done**
- **Sustainable Profitability**
- **Work Hard, Play Hard**
- **Work Safe**

Mission Statement

We take care of our employees, our customers and our communities.

RM of Argyle - Proposed Site

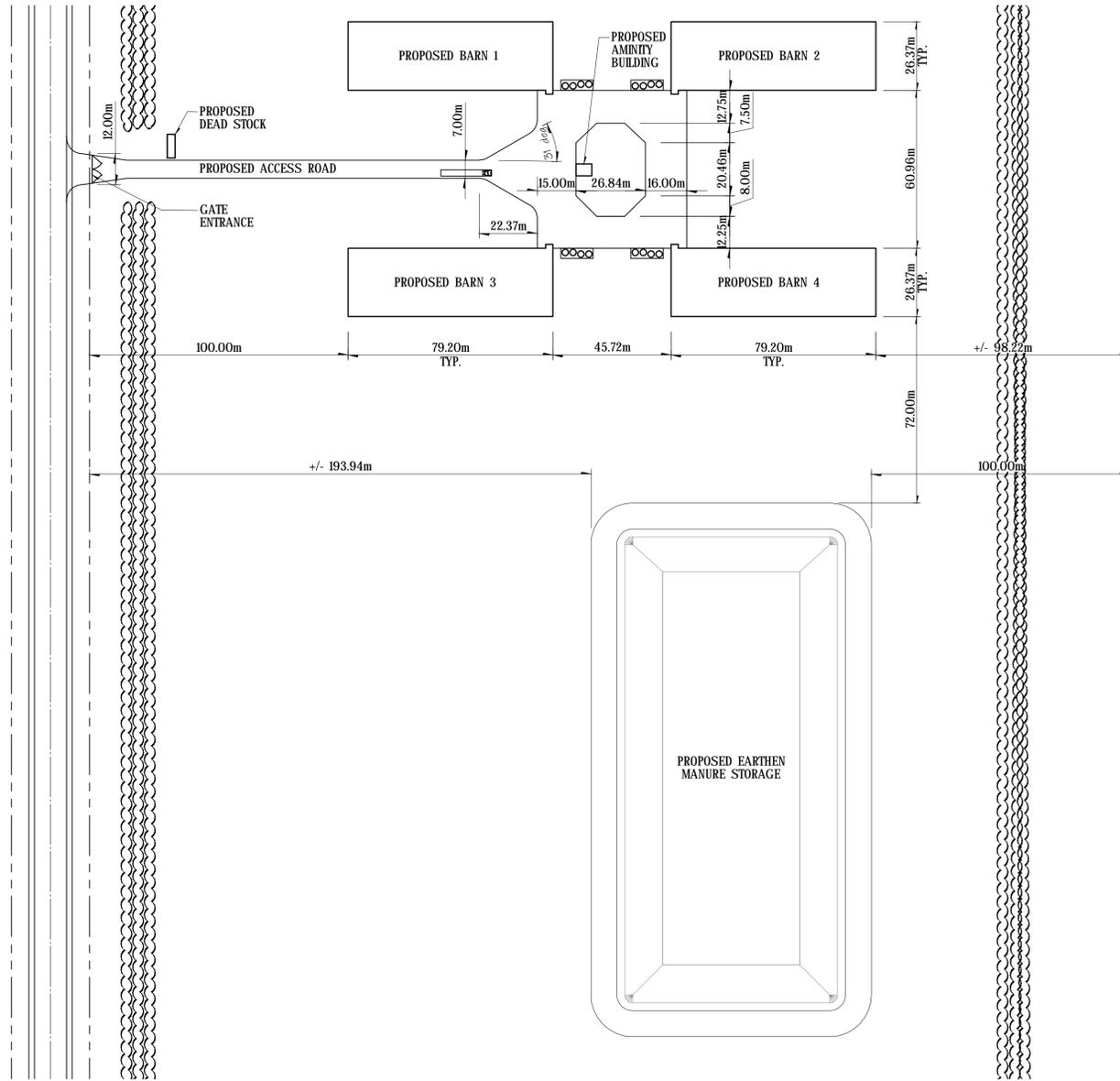
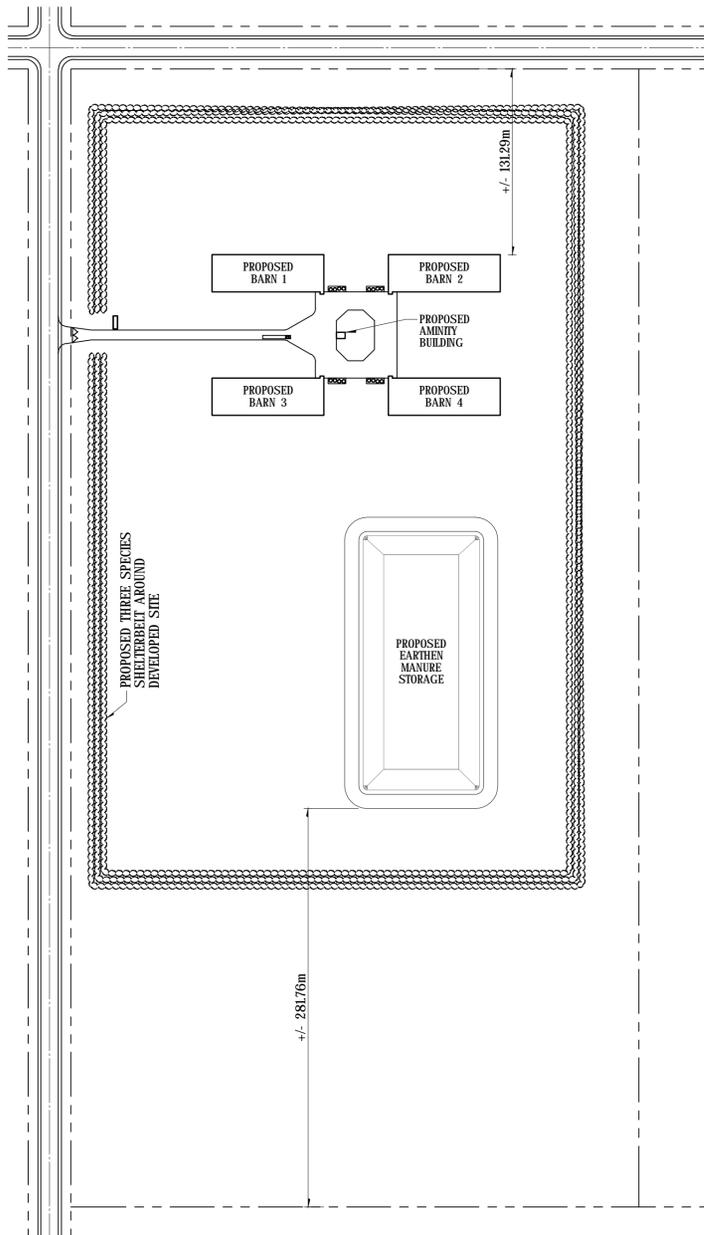


0 2 4

8 Miles



Prepared by:
Kieran Hamm
Nutrient Management Coordinator
Hylife Ltd.



SITE DEVELOPMENT - GENERAL SITE		
ITEM	SYMBOL	REMARKS
PROPERTY LINE	---	

LEGAL LAND DESCRIPTION
NW 10-6-41 W

- NOTES CONCERNING BUILDING LOCATION:**
1. THIS SITE PLAN IS BASED ON INFORMATION PROVIDED BY THE OWNER, AND NOT ON A SURVEY OR ACTUAL SITE MEASUREMENTS. DGH ENGINEERING IS TO BE ADVISED BEFORE START OF CONSTRUCTION OF ANY UN-SHOWN FEATURES ON THIS OR THE ADJACENT SITES THAT MIGHT IMPACT ON THE PROJECT EITHER DURING CONSTRUCTION OR DURING FUTURE USE.
 2. THE 'NORTH' ORIENTATION REFERS TO NOMINAL NORTH RATHER THAN TRUE OR MAGNETIC NORTH.
 3. ALL PROPERTY BOUNDARIES ARE TO BE ESTABLISHED BY A CERTIFIED MANITOBA LAND SURVEYOR PRIOR TO COMMENCEMENT OF CERTIFICATION.
 4. ANY DIMENSIONS THAT SHOW THE LOCATION OF EXISTING FEATURES ARE APPROXIMATE ONLY, AND ARE TO BE CONFIRMED AS REQUIRED BEFORE CONSTRUCTION START BY A CERTIFIED MANITOBA LAND SURVEYOR.
 5. THE CORNERS OF THE FOUNDATION FOOTPRINT ARE TO BE LOCATED ON SITE BEFORE CONSTRUCTION START BY A CERTIFIED MANITOBA LAND SURVEYOR.
 6. IF CERTIFICATION TO CODE IS TO BE PROVIDED BY DGH ENGINEERING, THEN A BUILDING LOCATION CERTIFICATE AND A ZONING MEMO ARE TO BE SUBMITTED TO DGH ENGINEERING ALONG WITH THE REQUEST FOR CERTIFICATION.
 7. ALL TOPSOIL IS TO BE REMOVED FROM THE BUILDING FOOTPRINT AND USED FOR RE-GRADING OR STOCK PILED ON SITE.
 8. THE TOP OF THE CONCRETE FLOOR SLAB IS TO BE SET AT LEAST 12 INCHES HIGHER THAN THE CROWN OF THE ROAD AT THE VEHICLE ACCESS, UNLESS OTHERWISE NOTED.
 9. THE FINISHED GRADE IS TO SLOPE AWAY FROM THE BUILDING ON ALL SIDES, AT A MINIMUM SLOPE OF 1 IN 12, TO MEET THE EXISTING GRADE.
 10. SITE GRADING IS TO BE FINISHED TO ENSURE THAT SURFACE RUN-OFF WILL DRAIN NEITHER ONTO THE ADJACENT PROPERTIES NOR ONTO THE ADJACENT STREETS, UNLESS OTHERWISE NOTED.

30/04/2019 12:45:03 PM, ISSUED FOR REVIEW, DRAWING NOT FOR CONSTRUCTION

ISSUED FOR REVIEW

ENGINEER'S SEAL

APEGM
Certificate of Authorization
DGH Engineering Ltd.
No. 540 Date: _____

NO.	REV.	DATE	DESCRIPTION	INITIALS
01		2019/04/29	ISSUED FOR REVIEW	NB

PRINTED DATE: 4/30/2019 12:45:03 PM

DGH ENGINEERING LTD.
CIVIL | STRUCTURAL | MECHANICAL | ELECTRICAL | INDUSTRIAL
12 Aviation Boulevard
St. Andrews MB. R1A 3N5 Canada
T: 204-334-8846
F: 204-334-6965
www.dghengineering.com

NOTE TO CONTRACTOR:
THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO DGH IN WRITING. DO NOT RELY ON SCALED DIMENSIONS. WRITTEN DIMENSIONS SHALL HAVE PRECEDENCE OVER SCALED DIMENSIONS. CONTACT THE ENGINEER FOR CLARIFICATIONS IF NECESSARY. THIS DRAWING SHALL NOT BE USED FOR BUILDING PERMIT OR CONSTRUCTION PURPOSES UNLESS IT IS SEALED AND SIGNED BY THE ENGINEER RESPONSIBLE FOR THE WORK.

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COPYRIGHT RESERVED. THIS DRAWING AND THE DESIGN REPRESENTED IN IT IS AND AT ALL TIMES REMAINS THE EXCLUSIVE PROPERTY OF DGH ENGINEERING LTD. (DGH) AND SHALL NOT BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF DGH.

CLIENT
HYLIFE LTD
BOX 100
LA BROQUERIE, MB
ROA OWO

DESIGNED	DRAWN	COORDINATOR

DATE	SCALE	X-REF PATH(S)
APR/2019	AS NOTED	F:\CLIENT PROJECTS\DWG

PROJECT TITLE
SHIRAZ NURSERY

PROJECT LOCATION

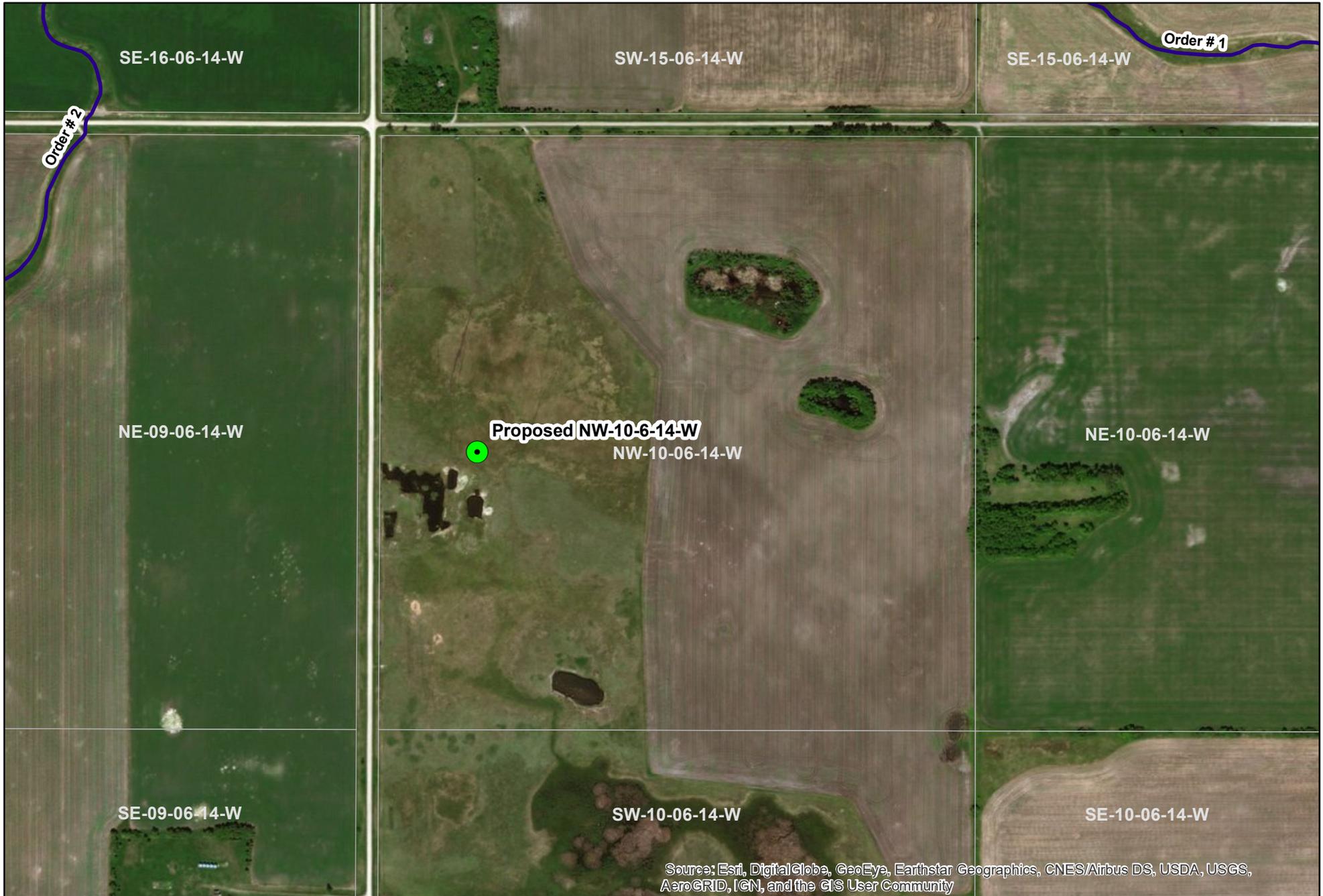
PROJECT NUMBER:

SITE LAYOUT

C1
REV. 000



Proposed Site [NW-10-6-14-W] - Surface Drainage



0 0.125 0.25 0.5 Miles



Prepared by:
Kieran Hamm
Nutrient Management Coordinator
HyLife Ltd.

Animal Units Calculator

A	B	C	Current Operation		Proposed Operation	
			D	E	F	G
Operation Type	Animal Categories	Animal Units per Head	Current Number of Animals ¹	Current Animal Units	Proposed Number of Animals ²	Proposed Number of Animal Units
Dairy ³	Mature cows (lactating and dry) including associated livestock	2		-		-
	Mature cows (lactating and dry)	1.35		-		-
	Heifers (0 to 3 months)	0.16		-		-
	Heifers (4 to 13 months)	0.41		-		-
	Heifers (> 13 months)	0.87		-		-
	Bulls	1.35		-		-
Beef	Veal calves	0.13		-		-
	Beef cows including associated livestock	1.25		-		-
	Backgrounder	0.5		-		-
	Summer pasture / replacement heifers	0.625		-		-
Pigs	Feeder cattle	0.769		-		-
	Sows - farrow to finish (234-254 lbs)	1.25		-		-
	Sows - farrow to weaning (up to 11 lbs)	0.25		-		-
	Sows - farrow to nursery (51 lbs)	0.313		-		-
	Boars (artificial insemination units)	0.2		-		-
	Weanlings, Nursery (11-51 lbs)	0.033		-	24,000	792
	Growers / Finishers (51-249 lbs)	0.143		-		-
Chickens	Broilers	0.005		-		-
	Roasters	0.01		-		-
	Layers	0.0083		-		-
	Pullets	0.0033		-		-
	Broiler breeder pullets	0.0033		-		-
	Broiler breeder hens	0.01		-		-
Turkeys	Broilers	0.01		-		-
	Heavy Toms	0.02		-		-
	Heavy Hens	0.01		-		-
Horses	Mares	1.333		-		-
Sheep	Ewes	0.2		-		-
	Feeder lambs	0.063		-		-
Other Livestock	Type:			-		-
	Type:			-		-
Total Current:				-	Total Proposed:	792

Footnotes:

¹ Enter the current number of animals on the farm based on the operation's capacity (animal places) or previous Conditional Use Approval.

² Enter the total number of animals associated with the operation post construction or expansion.

³ There are 2 methods for calculating animal units for dairy (Farm Practices Guidelines for Dairy Producers in Manitoba, 1995). You can enter the total number of mature cows in the milking herd under the "Mature cows (lactating and dry) including associated livestock" category and the animal units will be calculated by multiplying this number by 2. This calculation assumes 85 lactating, 15 dry, 12 heifers (0 to 3 months), 36 heifers (4 to 13 months) and 50 heifers (> 13 months) for an operation with 100 mature cows. "Associated livestock" includes all of the heifer calves and replacement heifers. Alternatively, you can enter animal numbers in the individual categories (mature cows, heifers (0 to 3 months), heifers (4 to 13 months) and heifers (> 13 months)) and they will be summed at the bottom of the table. Bulls and veal calves are always calculated separately.

[For all other livestock or operation types please inquire with the Manitoba Agriculture Contacts](#)



Water Requirement Calculation Table

Livestock	Number	IG/day per animal in winter	IG/day per animal in summer	IG/day (Imperial gallons per day)
Beef/Dairy/Bison *				
Feeder/heifer/steer (600 lb.)		5	9	-
Feeder (900 lb.)		7	12	-
Feeder (1250 lb.)		10	15	-
Cow/calf pair		12	15	-
Dry milking cow **		10	12	-
Lactating cow **		25	30	-
Bison		8	10	-
Horses				
Horses		8	11	-
Hogs				
Sow (Farrow/wean)		6.5		-
Dry Sow/Boar		4		-
Feeder		3		-
Nursery (33 lb.)	24,000	2		48,000
Chickens				
Broilers		0.035		-
Roasters/Pullets		0.04		-
Layers		0.055		-
Breeders		0.07		-
Turkeys				
Turkey Growers		0.13		-
Turkey Heavies		0.16		-
Sheep/Goats				
Sheep/Goats		2		-
Ewes/Does		3		-
Lambs/Kids (90 lb.)		1.6		-
TOTAL (IG/day)				48,000
*** TOTAL with 10% wash water				52,800

* For beef, dairy, bison and horse enterprises:
Use summer numbers if appropriate for the operation. Otherwise base projections on winter values. Always use the greater of the two values.

** For intensive Dairy operations, please use the Dairy Barn Water Requirement Estimator found on separate sheet.

Enter this number on page 7 of Application Form.

*** 10% of the total is added to allow for wash water

Other consumption:
Normal household consumption:
60-75 IG/day per person or
(272-340 l/day/person)

Unit Conversions		
Total per day	Total per year	Unit
52,800	19,272,000	IG
218,208	79,645,920	litres
0.218	80	cubic decametres (dam ³)

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

Water Use Licensing Section

Box 16, 200 Saulteaux Crescent, Winnipeg MB R3J 3W3

T: 204-945-3983

F: 204-948-2357

E: wateruse@gov.mb.ca

www.manitoba.ca

April 30, 2019

File: Hylife Ltd. -27 (Shiraz Nursery)

Hylife Ltd.
C/O Carlie Pauls
Box 100, 5 Fabas St.
La Broquerie, MB ROA OWO

Dear Ms. Pauls:

Attached herewith is the **Groundwater Exploration Permit** issued in response to your application submitted on April 23, 2019, for a licence to construct well(s) and divert groundwater in **Section 10-6-14 WPM, The Rural Municipality of Argyle, MB**, for **agricultural** purposes.

The Groundwater Exploration Permit authorizes Hylife Ltd. to carry out exploration test drilling, construct production well(s), and conduct aquifer pump testing. The purpose of the pump testing is to determine if sufficient water is available from the well(s) and from the aquifer to support the project and to determine water level impacts on existing local wells and/or registered projects with earlier precedence dates than the proposed project. Please note that during testing, pumping must cease if any local water supplies are negatively impacted as a result of testing. Hylife Ltd. would further be responsible to correct any water supply problems or provide temporary water supply to anyone whose water supplies are negatively impacted as a result of testing. Please familiarize yourself with the terms and conditions of the Groundwater Exploration Permit.

A licensing decision on this project will be held pending submission of the required information. Please note that diversion of water without a Water Rights Licence or written authorization would constitute a violation of *The Water Rights Act* and may be subject to enforcement.

One important condition of any licence that may be issued for this project, in due course, is that a water use monitoring device must be installed on the pipeline from the supply well(s), positioned to accurately measure instantaneous pumping rate and accumulative withdrawals.

Please contact Tobin Harrison directly at 204-945-6693 should you have any questions regarding the requirements outlined in this letter and the attached permit or the water rights licensing aspects of this project.

Yours truly,



Kylee Wiseman, P. Geo.
A/Head of Groundwater Licensing
Drainage & Water Rights Licensing Branch

Cc: CAO, RM of Argyle
Tobin Harrison, (SD)

Groundwater Exploration Permit

Pursuant to The Water Rights Act

Hylife Ltd.

is hereby permitted to explore for and construct a groundwater well or wells on the following described lands, **Section 10-6-14 WPM, in The Rural Municipality of Argyle, Manitoba** for **agricultural purposes**, subject, however, to the following conditions:

1. The permittee must have legal access to the site where the exploration work and project wells are to be located.
2. This Authorization is not transferable or assignable to any other party.
3. Prior to undertaking any work or construction of any works authorized by this permit the permittee is required to retain the services of a hydrogeologist registered with Engineers Geoscientists Manitoba, who would be required to:
 - Plan and supervise the drilling of boreholes, test wells, production well(s), observation wells, and well pump testing as authorized by this permit.
 - Conduct a constant rate pumping test on proposed production well(s) in accordance with Form H (http://www.gov.mb.ca/conservation/waterstewardship/licensing/wlb/pdf/form_h_july_2013.pdf).
 - Conduct a recovery test for a period equal to pump test or 90% recovery.
 - Carry out an inventory of private and commercial wells within a 1 mile radius of the project well site. The inventory may need to be expanded based on the assessment of the expected area of water level drawdown impact resulting from future pumping.
 - Prepare and submit to the Drainage and Water Rights Licensing Branch a technical report on drilling of boreholes and wells, pump testing of well, well inventory and water quality sampling. The report would contain, but not limited to, such things as: well driller's reports for test wells, production wells and observation wells; a plan showing the location of these wells on the property and/or GPS locations of the wells; an analysis of aquifer pumping tests; calculations of transmissivity; and a description of the amount of water level interference that would be expected to occur at existing local wells that are located within a 1 mile radius of the project well site. Two copies of the report shall be submitted, one hardcopy and one digital copy.
4. During any pumping tests that may be conducted, pumping must cease immediately if any local water supplies are negatively impacted as a result of the tests. The permittee is also responsible to correct any water supply problems or provide temporary water supply to anyone whose water supplies are negatively impacted as a result of the tests.
5. This permit expires within twelve (12) months of the date of issuance.
6. Please note that diversion of water without a Water Rights Licence or written authorization would constitute a violation of The Water Rights Act and may be subject to enforcement.

Issued at the City of Winnipeg in the Province of Manitoba, this 30th day of April, A.D. 2019


for The Honourable Minister of Sustainable Development

Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period ² (Days) (G)	Number of Animals ³ (Capacity) (H)	Total Manure Volume (ft ³) (F _X G _X H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)	
		References (C)	Manure Type (D)	Default Manure Production (ft ³ /animal/day) (E)	Operation Manure Production ¹ (ft ³ /animal/day) (F)					
Dairy (milking cows ⁴ and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid ⁵	3.5				-	0.0	
			Solid	3.4				-		
			Liquid ⁵	3.5				-	0.0	
	Tie Stall		Semi-Solid ⁵	3.6				-	0.0	
			Solid	3.5				-		
			Liquid ⁵	3.6				-	0.0	
Loose Housing		Solid	3.0				-			
Milking Parlour Manure and Washwater		Liquid	0.5				-			
Beef	Beef cows including associated livestock	pg 117, FPGs for Hogs 1998	Solid	1.2				-		
	Backgrounder (200 day)		Solid	0.73				-		
	Summer pasture / replacement heifers		Solid	0.85				-		
	Feeder cattle		Solid	1.1				-		
Pigs	Sows - farrow to finish (234 - 254 lbs)	MAFRI website, FPGs for Pigs 2007	Liquid	2.3				-	0.0	
	Sows - farrow to wean (up to 11 lbs)		Liquid	0.8				-	0.0	
	Sows - farrow to nursery (51 lbs)		Liquid	1				-	0.0	
	Weanlings, Nursery (11 - 51 lbs)		Liquid	0.1	0.1	400.00	24,000	960,000.00	5,980,800.0	
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25				-	0.0	
Animal Type	Type of Operation	Yearly Manure Production		Production Period ² (Days)	Number of Birds ³ (Capacity)	Total Manure Volume (ft ³) (F/365xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)			
		Default Manure Production (ft ³ /year/bird space)	Operation Manure Production ¹ (ft ³ /year/bird space)							
Chickens	Broilers – floor ⁶	Table 3, pg 85, FPGs for Poultry 2000		1.23				-		
	Broiler breeder hens ⁷			2.3				-		
	Broiler breeder pullets ⁶			0.99				-		
	Roasters – floor ⁶			1.16				-		
	Layers – cage ⁸			2.33				-	0.0	
	Layers – floor ⁷			1.68				-		
	Layers – solid pack ⁹							-		
	Pullets – cage ⁵				0.71				-	0.0
	Pullets – floor ⁶				0.75				-	
Pullets – solid pack ⁹							-			
Turkeys	Broilers ⁶	Table 3, pg 85, FPGs for Poultry 2000		2.83				-		
	Heavy toms ⁶			5.58				-		
	Heavy hens ⁶			3.32				-		

Sizing of a manure storage facility in accordance with all requirements of the *Livestock Manure and Mortalities Management Regulation (M.R. 42/98)* is the responsibility of the operator.

Instructions and footnotes:

- ¹ ENTER the manure production estimate for your operation. If no estimate is available, use the default value provided in column E. References for default daily and yearly manure production are provided in column C.
- ² ENTER the number of days worth of manure that will be produced. For earthen manure storage facilities the minimum storage requirement is 400 days. For steel and concrete manure storage facilities the minimum storage requirement is 250
- ³ ENTER the total number of animals or birds that the operation can hold (e.g. barn or feedlot capacity).
- ⁴ Milking cows includes all lactating and dry cows.
- ⁵ Default manure production estimates for semi-solid and liquid dairy manure include manure and washwater from the milking parlour.
- ⁶ 2 inches of wood shavings or 4 inches of straw placed on floor. Manure and litter removed from barn at 25% moisture content, with a density of 20 lb/ft³
- ⁷ One-third litter floor, two-thirds slatted floor. Manure and litter removed from barn at 40% moisture content, with a density of 25 lb/ft³
- ⁸ Manure removed from barn at 90% moisture content with a density of 59 lb/ft³
- ⁹ Poultry operations using litter (solid pack) must provide an estimate of yearly manure production

If available, indicate the dimensions of any proposed manure storage facility (MSF) that will be used to store manure from the proposed project:

CELL	Proposed Manure Storage Facility Dimensions						Storage Capacity (days)
	Width	Length	Depth	Height (Above Grade)	Slope (H:L)		
					Inside	Outside	
Primary	400 ft	300 ft	14 ft	ft	1:4	1:5	401
Secondary	ft	ft	ft	ft			
Tertiary	ft	ft	ft	ft			
Circular Tank		Diameter	Height	Depth			
		ft	ft	ft			

The construction, modification or expansion of any manure storage structure requires a permit from Manitoba Sustainable Development as per the *Livestock Manure and Mortalities Management Regulation (M.R. 42/98)*.

The proposed site is rolling. The height of the EMS will be verified on site.



Manure Application Field Characteristics Table - Shiraz Nursery

	A	B	C	D	E	F	G	H	I	J
Field	Legal Description	Rural Municipality	O/C/L /A	Total Acreage	Setbacks	Net Acreage For Application	Ag Capability Class/Subclass	Soil Phos (0-6" Olsen ppm)	Development Plan Designation	Zoning
1	NW-10-06-14-W	Argyle	A	120	15	105	2MT	18	Rural/Agricultural	AG - Agricultural General
2	NE-10-06-14-W	Argyle	A	160	4	156	2MT	10	Rural/Agricultural	AG - Agricultural General
3	SW-10-06-14-W	Argyle	A	160	77	83	2W	8	Rural/Agricultural	AG - Agricultural General
4	NW-09-06-14-W	Argyle	A	160	64	96	2T	15	Rural/Agricultural	AG - Agricultural General
5	NE-09-06-14-W	Argyle	A	180	2	178	2T	8	Rural/Agricultural	AG - Agricultural General
6	SE-09-06-14-W	Argyle	A	80	0	80	2W	24	Rural/Agricultural	AG - Agricultural General
7	SW-09-06-14-W	Argyle	A	160	106	54	2W	11	Rural/Agricultural	AG - Agricultural General
8	SE-16-06-14-W	Argyle	A	160	4	156	2T	23/20	Rural/Agricultural	AG - Agricultural General
9	SW-16-06-14-W	Argyle	A	160	0	160	2T	15	Rural/Agricultural	AG - Agricultural General
10	SW-15-06-14-W	Argyle	A	80	18	62	3M/5N	18	Rural/Agricultural	AG - Agricultural General
11	SW-14-06-14-W	Argyle	A	160	10	150	3M	15	Rural/Agricultural	AG - Agricultural General
12										
13										
14										
15										
16										
17										
18										
19										
20										
Total Net Acreage for Manure						1280				

CROP ROTATION TABLE



A	B	C	D	E
Expected Crops in the Rotation	Acreage	Historical Yield	Units	Source of Yield Information
Total Net Acreage for Manure Application				

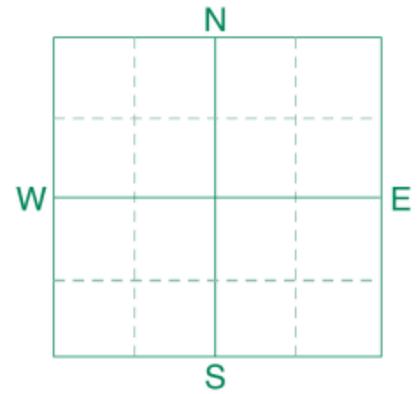
- A. List all of the crop(s) to be grown in the rotation on the acreage that will receive manure.
- B. Indicate the average acreage for each crop over the rotation. For example, if there are 720 suitable acres available for manure and approximately 40 these acres will be used to grow canola, enter 288. The total of column B should add up to Total Net Acreage for Manure Application provided in the Manure Application Field Characteristic Table.
- C. Enter the historical yield average for each crop. Long-term yield averages can be determined using MASC data (<http://www.masc.mb.ca/masc.nsf/index.html?OpenPage>) or on-farm yield records. If on-farm yield records are used, please provide copies.
- D. Enter the units for the yields provided (e.g. bu/acre, tons/acre).
- E. Enter the source of the historical yield average provided.



Soil Analysis by Agvise Laboratories
 (<http://www.agvise.com>)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **1**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **10** QTR **NW** ACRES **105**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597726** BOX # **3375**
 LAB # **NW18405**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		VLow	Low	Med	High											
Nitrate	0-6" 6-24"	60 lb/ac 75 lb/ac					Canola-bu		Wheat-Spring		Grass/Pasture					
							YIELD GOAL		YIELD GOAL		YIELD GOAL					
	0-24"	135 lb/ac					50 BU		60 BU		4 Tons					
							SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES					
							Band		Band		Band					
							LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION				
Phosphorus	Olsen	18 ppm					N	40	N	27	N	0				
Potassium		217 ppm					P ₂ O ₅	18	Band *	P ₂ O ₅	15	Band (Starter)*	P ₂ O ₅	3	Band *	
Chloride							K ₂ O	0		K ₂ O	10	Band (Starter)*	K ₂ O	10	Band *	
Sulfur	0-6" 6-24"	50 lb/ac 360 +lb/ac					Cl		Cl		Cl					
Boron							S	10	Band	S	0		S	0		
Zinc							B		B		B					
Iron							Zn		Zn		Zn					
Manganese							Fe		Fe		Fe					
Copper							Mn		Mn		Mn					
Magnesium							Cu		Cu		Cu					
Calcium							Mg		Mg		Mg					
Sodium							Lime	0	Lime	0	Lime	0				
Org.Matter							Soil pH		Cation Exchange Capacity		% Base Saturation (Typical Range)					
Carbonate(CCE)							Buffer pH				% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	0.47 mmho/cm 2.47 mmho/cm					0-6" 6.7									
							6-24" 7.7									

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

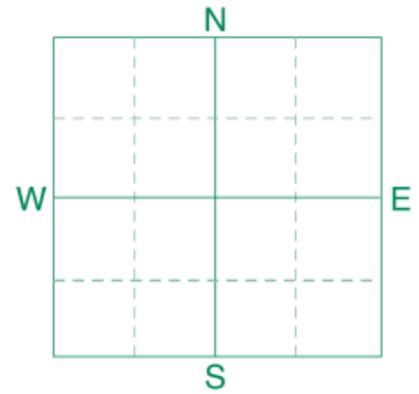
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories
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 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **2**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **10** QTR **NE** ACRES **155**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597728** BOX # **3343**
 LAB # **NW18406**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
		VLow	Low	Med	High											
Nitrate	0-6" 6-24"	21 lb/ac 36 lb/ac	*****				Canola-bu			Wheat-Spring			Grass/Pasture			
							YIELD GOAL			YIELD GOAL			YIELD GOAL			
	0-24"	57 lb/ac					50 BU			60 BU			4 Tons			
							SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			
							Band			Band			Band			
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION			
Phosphorus	Olsen	10 ppm	*****			N	118		N	105		N	63			
Potassium		275 ppm	*****			P ₂ O ₅	38	Band *	P ₂ O ₅	31	Band *	P ₂ O ₅	23	Band *		
Chloride						K ₂ O	0		K ₂ O	10	Band (Starter)*	K ₂ O	0			
Sulfur	0-6" 6-24"	44 lb/ac 360 +lb/ac	*****			Cl			Cl			Cl				
Boron						S	10	Band	S	0		S	0			
Zinc						B			B			B				
Iron						Zn			Zn			Zn				
Manganese						Fe			Fe			Fe				
Copper						Mn			Mn			Mn				
Magnesium						Cu			Cu			Cu				
Calcium						Mg			Mg			Mg				
Sodium						Lime	0		Lime	0		Lime	0			
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)				
Carbonate(CCE)						Buffer pH					% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	0.36 mmho/cm 1.2 mmho/cm	*****			0-6" 6.8										
			*****			6-24" 7.9										

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

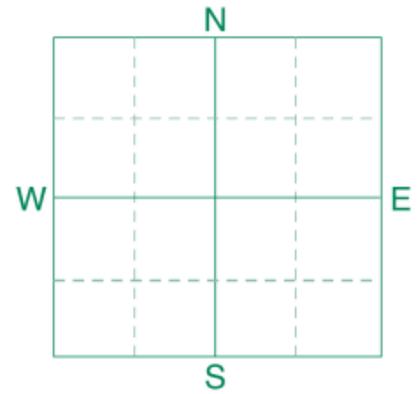
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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SOIL TEST REPORT

FIELD ID **3**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **10** QTR **SW** ACRES **85**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597729** BOX # **3317**
 LAB # **NW18407**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice							
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture							
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL							
	55 lb/ac 195 lb/ac	*****				50 BU			60 BU			4 Tons							
	0-24"	*****				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES							
	250 lb/ac	*****				Band			Band			Band							
		*****				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION						
Phosphorus	Olsen 8 ppm	*****				N	0		N	10		N	0						
Potassium	230 ppm	*****				P2O5	43	Band *	P2O5	35	Band *	P2O5	28	Band *					
Chloride		*****				K2O	0		K2O	10	Band (Starter)*	K2O	7	Band *					
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl							
	120 +lb/ac 360 +lb/ac	*****				S	10	Band	S	0		S	0						
Boron		*****				B			B			B							
Zinc		*****				Zn			Zn			Zn							
Iron		*****				Fe			Fe			Fe							
Manganese		*****				Mn			Mn			Mn							
Copper		*****				Cu			Cu			Cu							
Magnesium		*****				Mg			Mg			Mg							
Calcium		*****				Lime			Lime			Lime							
Sodium		*****																	
Org.Matter		*****				Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)				
Carbonate(CCE)		*****													% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24"	*****				0-6"	7.4												
	0.91 mmho/cm 1.4 mmho/cm	*****				6-24"	8.2												

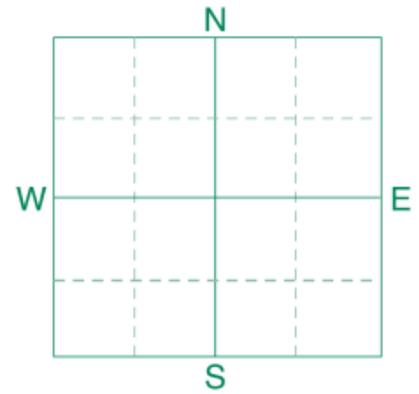
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **4**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **9** QTR **SE** ACRES **80**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597730** BOX # **3398**
 LAB # **NW18408**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 6-24"	83 lb/ac 195 lb/ac					Canola-bu	Wheat-Spring	Grass/Pasture					
							YIELD GOAL	YIELD GOAL	YIELD GOAL					
							50 BU	60 BU	4 Tons					
	0-24"	278 lb/ac					SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
							Band	Band	Band					
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen	24 ppm					N	0	N	10	N	0		
Potassium		186 ppm					P ₂ O ₅	10	P ₂ O ₅	15	P ₂ O ₅	0		
								Band (Starter)*		Band (Starter)*		Band *		
Chloride							K ₂ O	0	K ₂ O	10	K ₂ O	18		
Sulfur	0-6" 6-24"	120 +lb/ac 360 +lb/ac					Cl		Cl		Cl			
Boron							S	10	S	0	S	0		
Zinc							B		B		B			
Iron							Zn		Zn		Zn			
Manganese							Fe		Fe		Fe			
Copper							Mn		Mn		Mn			
Magnesium							Cu		Cu		Cu			
Calcium							Mg		Mg		Mg			
Sodium							Lime		Lime		Lime			
Org.Matter														
Carbonate(CCE)														
Sol. Salts	0-6"	2.14 mmho/cm					Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)			
	6-24"	3.25 mmho/cm								% Ca	% Mg	% K	% Na	% H
							0-6" 7.3							
							6-24" 7.8							

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. High salt levels may decrease yields in portions of this field. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. High salt levels may decrease yields in portions of this field. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

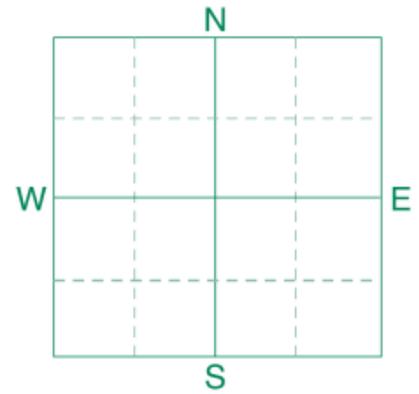
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. High salt levels may decrease yields in portions of this field. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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SOIL TEST REPORT

FIELD ID **5**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **9** QTR **NE** ACRES **178**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597731** BOX # **3398**
 LAB # **NW18409**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture		
Nitrate	0-6" 6-24"	*****	*****	*****	*****	YIELD GOAL			YIELD GOAL			YIELD GOAL		
	13 lb/ac 45 lb/ac					50 BU	60 BU	4 Tons						
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Band			Band			Band		
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION	
Phosphorus	Olsen 8 ppm	*****	*****	*****	*****	N 117			N 104			N 62		
Potassium	246 ppm	*****	*****	*****	*****	P2O5 43	Band *		P2O5 35	Band *		P2O5 28	Band *	
Chloride						K2O 0			K2O 10	Band (Starter)*		K2O 3	Band *	
Sulfur	0-6" 6-24"	*****	*****	*****	*****	Cl			Cl			Cl		
Boron						S 10	Band		S 0			S 0		
Zinc						B			B			B		
Iron						Zn			Zn			Zn		
Manganese						Fe			Fe			Fe		
Copper						Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu		
Calcium						Mg			Mg			Mg		
Sodium						Lime			Lime			Lime		
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	*****	*****	*****	*****	0-6" 7.7								
	0.61 mmho/cm 2.07 mmho/cm	*****	*****	*****	*****	6-24" 7.9								

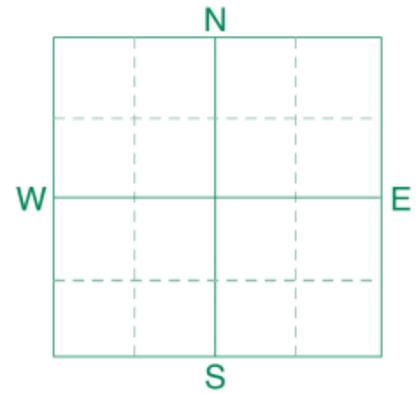
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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<http://www.agvise.com>
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 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **6**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **9** QTR **NW** ACRES **96**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597732** BOX # **3343**
 LAB # **NW18411**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice							
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture							
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL							
	0-24"					46 lb/ac 159 lb/ac	205 lb/ac	50 BU	60 BU	4 Tons									
	SUGGESTED GUIDELINES					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES										
	Band					Band			Band										
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION						
Phosphorus	Olsen 15 ppm	*****				N	4		N	10		N	0						
Potassium	236 ppm	*****				P2O5	25	Band *	P2O5	21	Band *	P2O5	11	Band *					
Chloride						K2O	0		K2O	10	Band (Starter)*	K2O	6	Band *					
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl							
	120 +lb/ac 360 +lb/ac	*****				S	10	Band	S	0		S	0						
Boron						B			B			B							
Zinc						Zn			Zn			Zn							
Iron						Fe			Fe			Fe							
Manganese						Mn			Mn			Mn							
Copper						Cu			Cu			Cu							
Magnesium						Mg			Mg			Mg							
Calcium						Lime			Lime			Lime							
Sodium						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)				
Org.Matter					% Ca										% Mg	% K	% Na	% H	
Carbonate(CCE)					0-6" 7.5														
Sol. Salts	0-6" 6-24"	*****				6-24" 8.0													
	0.88 mmho/cm 1.38 mmho/cm	*****																	

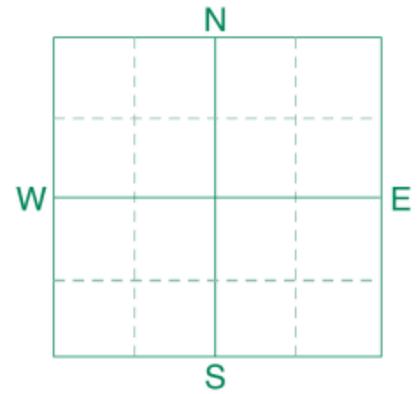
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories
<http://www.agvise.com>
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **7**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **9** QTR **SW** ACRES **54**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597733** BOX # **3398**
 LAB # **NW18412**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice		
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture		
Nitrate	0-6" 6-24"	74 lb/ac 108 lb/ac				YIELD GOAL			YIELD GOAL			YIELD GOAL		
	0-24"	182 lb/ac				50 BU			60 BU			4 Tons		
		*****				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
						Band			Band			Band		
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION	
Phosphorus	Olsen	11 ppm				N	0		N	10		N	0	
Potassium		306 ppm				P2O5	35 Band *		P2O5	29 Band *		P2O5	21 Band *	
Chloride						K2O	0		K2O	10 Band (Starter)*		K2O	0	
Sulfur	0-6" 6-24"	120 +lb/ac 360 +lb/ac				Cl			Cl			Cl		
Boron						S	10 Band		S	0		S	0	
Zinc						B			B			B		
Iron						Zn			Zn			Zn		
Manganese						Fe			Fe			Fe		
Copper						Mn			Mn			Mn		
Magnesium						Cu			Cu			Cu		
Calcium						Mg			Mg			Mg		
Sodium						Lime			Lime			Lime		
Org.Matter						Soil pH			Cation Exchange Capacity			% Base Saturation (Typical Range)		
Carbonate(CCE)						Buffer pH			% Ca	% Mg	% K	% Na	% H	
Sol. Salts	0-6" 6-24"	0.84 mmho/cm 1.55 mmho/cm				0-6"	7.1							
		*****				6-24"	8.1							

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

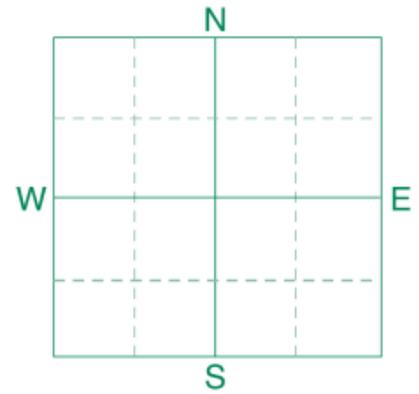
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories
 (<http://www.agvise.com>)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **8**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **16** QTR **SW** ACRES **160**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597734** BOX # **3398**
 LAB # **NW18413**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture			
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL			
	113 lb/ac 282 lb/ac					50 BU	60 BU	4 Tons							
	0-24"					395 lb/ac	SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES		
							Band		Band		Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION				
Phosphorus	Olsen 15 ppm	*****				N	0		N	10		N	0		
Potassium	257 ppm	*****				P ₂ O ₅	25	Band *	P ₂ O ₅	21	Band *	P ₂ O ₅	11	Band *	
Chloride						K ₂ O	0		K ₂ O	10	Band (Starter)*	K ₂ O	0		
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl			
	38 lb/ac 108 lb/ac	*****				S	10	Band	S	0		S	0		
Boron						B			B			B			
Zinc						Zn			Zn			Zn			
Iron						Fe			Fe			Fe			
Manganese						Mn			Mn			Mn			
Copper						Cu			Cu			Cu			
Magnesium						Mg			Mg			Mg			
Calcium						Lime			Lime			Lime			
Sodium															
Org.Matter															
Carbonate(CCE)															
Sol. Salts	0-6" 6-24"	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)						
	0.74 mmho/cm 0.59 mmho/cm					0-6" 7.2 6-24" 7.8			% Ca	% Mg	% K	% Na	% H		

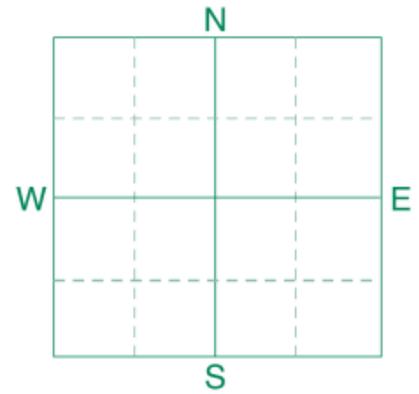
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories
 (<http://www.agvise.com>)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **9**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **16** QTR **SE** ACRES **80**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597735** BOX # **3374**
 LAB # **NW18414**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice					
		VLow	Low	Med	High										
Nitrate	0-6" 6-24"	120 lb/ac 240 lb/ac					Canola-bu	Wheat-Spring	Grass/Pasture						
							YIELD GOAL	YIELD GOAL	YIELD GOAL						
	0-24"	360 lb/ac					50 BU	60 BU	4 Tons						
							SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES						
							Band	Band	Band						
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION				
Phosphorus	Olsen	23 ppm					N	0	N	10	N	0			
Potassium		247 ppm					P ₂ O ₅	10	P ₂ O ₅	15	P ₂ O ₅	0			
								Band (Starter)*		Band (Starter)*		Band *			
Chloride							K ₂ O	0	K ₂ O	10	K ₂ O	3			
Sulfur	0-6" 6-24"	44 lb/ac 108 lb/ac					Cl		Cl		Cl				
Boron							S	10	S	0	S	0			
Zinc							B		B		B				
Iron							Zn		Zn		Zn				
Manganese							Fe		Fe		Fe				
Copper							Mn		Mn		Mn				
Magnesium							Cu		Cu		Cu				
Calcium							Mg		Mg		Mg				
Sodium							Lime	0	Lime	0	Lime	0			
Org.Matter															
Carbonate(CCE)															
							Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
											% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24"	0.76 mmho/cm 0.8 mmho/cm					0-6" 6.4								
							6-24" 7.4								

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

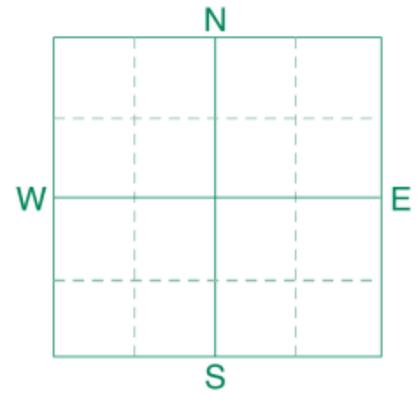
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **10**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **16** QTR **SE** ACRES **76**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597736** BOX # **3317**
 LAB # **NW18415**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice					
		VLow	Low	Med	High										
Nitrate	0-6" 6-24"	80 lb/ac 162 lb/ac					Canola-bu		Wheat-Spring		Grass/Pasture				
							YIELD GOAL		YIELD GOAL		YIELD GOAL				
	0-24"	242 lb/ac					50 BU		60 BU		4 Tons				
							SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
							Band		Band		Band				
							LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen	20 ppm					N	0	N	10	N	0			
Potassium		314 ppm					P ₂ O ₅	13	Band *	P ₂ O ₅	15	Band (Starter)*	P ₂ O ₅	0	
Chloride							K ₂ O	0		K ₂ O	10	Band (Starter)*	K ₂ O	0	
Sulfur	0-6" 6-24"	98 lb/ac 120 lb/ac					Cl		Cl		Cl				
Boron							S	10	Band	S	0	S	0		
Zinc							B		B		B				
Iron							Zn		Zn		Zn				
Manganese							Fe		Fe		Fe				
Copper							Mn		Mn		Mn				
Magnesium							Cu		Cu		Cu				
Calcium							Mg		Mg		Mg				
Sodium							Lime	0	Lime	0	Lime	0			
Org.Matter															
Carbonate(CCE)							Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
											% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24"	0.72 mmho/cm 0.78 mmho/cm					0-6" 6.3								
							6-24" 7.4								

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

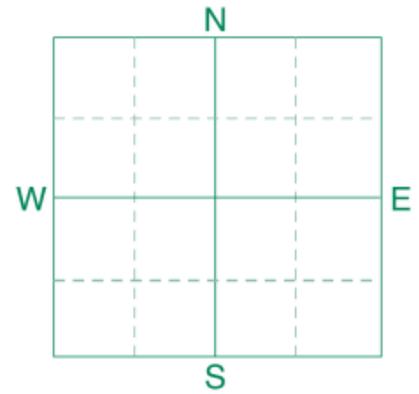
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



Soil Analysis by Agvise Laboratories
 (<http://www.agvise.com>)
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **11**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **15** QTR **SW** ACRES **62**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597738** BOX # **3304**
 LAB # **NW18416**

Date Sampled

Date Received **04/25/2019**

Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High								
Nitrate	0-6" 6-24"	75 lb/ac 126 lb/ac					Canola-bu	Wheat-Spring	Grass/Pasture				
							YIELD GOAL	YIELD GOAL	YIELD GOAL				
	0-24"	201 lb/ac					50 BU	60 BU	4 Tons				
							SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES				
							Band	Band	Band				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Phosphorus	Olsen	18 ppm					N 0	N 10	N 0				
Potassium		452 ppm					P ₂ O ₅ 18 Band *	P ₂ O ₅ 15 Band (Starter)*	P ₂ O ₅ 3 Band *				
Chloride							K ₂ O 0	K ₂ O 10 Band (Starter)*	K ₂ O 0				
Sulfur	0-6" 6-24"	48 lb/ac 186 lb/ac					Cl	Cl	Cl				
Boron							S 10 Band	S 0	S 0				
Zinc							B	B	B				
Iron							Zn	Zn	Zn				
Manganese							Fe	Fe	Fe				
Copper							Mn	Mn	Mn				
Magnesium							Cu	Cu	Cu				
Calcium							Mg	Mg	Mg				
Sodium							Lime 0	Lime 0	Lime 0				
Org.Matter													
Carbonate(CCE)													
Sol. Salts	0-6" 6-24"	0.72 mmho/cm 0.76 mmho/cm					Soil pH	Buffer pH	% Base Saturation (Typical Range)				
							0-6" 6.7		% Ca	% Mg	% K	% Na	% H
							6-24" 7.7						

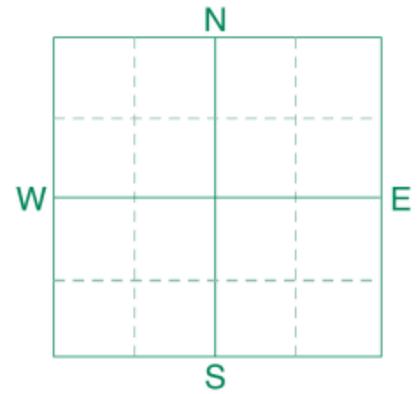
Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 2: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 38 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
Crop 3: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 48 K2O = 180 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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<http://www.agvise.com>
 Northwood: (701) 587-6010
 Benson: (320) 843-4109

SOIL TEST REPORT

FIELD ID **12**
 SAMPLE ID
 FIELD NAME
 COUNTY
 TWP **6** RANGE **14-W**
 SECTION **14** QTR **SW** ACRES **148**
 PREV. CROP



SUBMITTED FOR:
Hamilton

SUBMITTED BY: **HY4851**
HYLIFE LTD.
5 FABAS STREET
BOX 100
LA BROQUERIE, MB **ROA 0W0**

REF # **2597740** BOX # **3353**
 LAB # **NW18417**

Date Sampled

Date Received **04/25/2019**

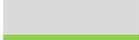
Date Reported **4/29/2019**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice							
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Grass/Pasture							
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL							
	59 lb/ac 111 lb/ac					50 BU	60 BU	4 Tons											
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES							
	170 lb/ac					Band			Band			Band							
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION						
Phosphorus	Olsen 15 ppm					N	5		N	10		N	0						
Potassium	323 ppm					P2O5	25	Band *	P2O5	21	Band *	P2O5	11	Band *					
Chloride						K2O	0		K2O	10	Band (Starter)*	K2O	0						
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl							
	120 +lb/ac 360 +lb/ac					S	10	Band	S	0		S	0						
Boron						B			B			B							
Zinc						Zn			Zn			Zn							
Iron						Fe			Fe			Fe							
Manganese						Mn			Mn			Mn							
Copper						Cu			Cu			Cu							
Magnesium						Mg			Mg			Mg							
Calcium						Lime	0		Lime	0		Lime	0						
Sodium						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)				
Org.Matter																			
Carbonate(CCE)																			
Sol. Salts	0-6" 6-24"	*****				0-6"	6.7												
	0.7 mmho/cm 1.6 mmho/cm					6-24"	7.5												

Crop 1: * Caution: Seed Placed Fertilizer Can Cause Injury * Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.
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Manitoba Agriculture Land Base Calculator

Colour Conventions:

-  Farm specific data can be entered in the yellow cells of each tab. Where appropriate, default values are provided in the grey cells of each tab.
-  Fixed data are provided in the grey cells of each tab.
-  Calculated values are shown in the green cells of each tab.
-  **The land base required for nitrogen (N) and phosphorus (P2O5) are provided in the amber**

Data Entry and Tab Information:

Enter the operation name on all of the livestock tabs (1a to 1e) associated with your farm.

Enter all of the livestock for your farm and associated data in the yellow cells under tabs 1a to 1e.

Enter all of the crop rotation data on tab 2. Long-term crop yield averages using MASC records are required.

Total nitrogen (N) and total phosphorus (P2O5) excreted by the livestock are summarized on tab 3.

Nutrient excretion, crop nutrient use and acres required for nitrogen (N) and phosphorus (P2O5) are summarized on tab 4.

For assistance, contact:

Clay Sawka, Nutrient Management Specialist, Manitoba Agriculture, (204) 750-3066

Petra Loro, Livestock Environment Specialist, Manitoba Agriculture, (204) 918-0325

Last revised October 16, 2018

It values have been provided but can be changed.

cells on tab 4.

ured for Provincial Technical Review Site Assessments.

mmarized on tab 4.

1a - Pigs

Operation Name:

Operation Type	Storage Type	Volatilization	Animal Numbers (Places)	Average Animal Wt (lb)	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)
Boars (Purchased)	Liquid Uncovered Earthen	30%		465	0
Weanlings	Liquid Uncovered Earthen	30%	24000	38	137946
Growers/Finishers	Liquid Uncovered Earthen	30%		171	0
Sows, farrow to 6.2 kg	Liquid Uncovered Earthen	30%		n/a	0
Sows, farrow to 28 kg	Liquid Uncovered Earthen	30%		n/a	0
Sows, farrow to finish	Liquid Uncovered Earthen	30%		n/a	0

Last Revised April 26, 2018

**P2O5 Excreted
Per Herd Per
Year**

(lb/yr/herd)

0

76979

0

0

0

0

2 - Crop Rotation

Operation Name:

Enter the operation name on the livestock tab(s)

Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake
	P2O5	N	N	Units				P2O5 (lb)	N (lb)	
Alfalfa	13.8	58	58	lb/ton		ton/ac		-	-	-
Barley Grain	0.42	0.97	1.39	lb/bu		bu/ac		-	-	-
Barley Silage	11.8	34.4	34.4	lb/ton		ton/ac		-	-	-
Canola	1.04	1.93	3.19	lb/bu	45.2	bu/ac	735	34551	64118	105978
Corn Grain	0.44	0.97	1.53	lb/bu		bu/ac		-	-	-
Corn Silage	12.7	31.2	31.2	lb/ton		tons/ac		-	-	-
Dry Edible Beans	1.39	4.17		lb/cwt		cwt/ac		-	-	-
Fababeans	1.79	5.02	8.4	lb/cwt		cwt/ac		-	-	-
Flax	0.65	2.13	2.88	lb/bu		bu/ac		-	-	-
Grass Hay	10	34.2	34.2	lb/ton	0.9	tons/ac	272	2448	8372	8372
Lentils	1.03	3.39	5.08	lb/cwt		cwt/ac		-	-	-
Oats	0.26	0.62	1.07	lb/bu		bu/ac		-	-	-
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac		-	-	-
Peas	0.69	2.34	3.06	lb/bu		bu/ac		-	-	-
Potatoes	0.09	0.32	0.57	lb/cwt		cwt/ac		-	-	-
Rye	0.45	1.06	1.67	lb/bu		bu/ac		-	-	-
Soybeans	0.84	3.87	5.2	lb/bu		bu/ac		-	-	-
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	62.5	bu/ac	273	10067	25594	36002
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-

Total Acres 1280 47066 98084 150352

Estimated Average Removal/Uptake (lb/ac) 36.8 76.6 117.5

Acres in Hanover and La Broquerie

Proportion in Hanover or La Broquerie 0%

Additional Acres

Crop Planned on Additional Acres

Total Acreage 1280

***Notes:**

Enter the number of acres that are in the RM's of Hanover or La Broquerie in cell H26.
Additional acres include acres for which crop removal or soil data is limited or unavailable.

Last revised December 18, 2017

3 - Farm Excretion

Operation Name: **Enter the operation name on the livestock tab(s)**

Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
Pigs	Boars	0	0
	Weanlings	137946	76979
	Growers/finishers	0	0
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
Beef	Mature Cows and Bred Heifers, plus associated livestock	0	0
	Feedlot Cattle - long keep	0	0
	Feedlot Cattle - short keep	0	0
	Backgrounders - pasture	0	0
	Backgrounders - confined	0	0
Dairy	Mature Cows, plus assoc livestock	0	0
Sheep	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
Chickens	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
Layers	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
Turkeys	Broiler Hens (0-9 wks)	0	0
	Hens (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	0	0
	Light Toms (0-12 wks)	0	0
	Toms (0-13 wks)	0	0
	Heavy Toms (0-15 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (30-60 wks)	0	0
	Breeding Tom Grower (0-18 wks)	0	0
	Breeding Tom Grower (0-30 wks)	0	0
	Breeding Tom (30-60 wks)	0	0
Total		137946	76979

Note:

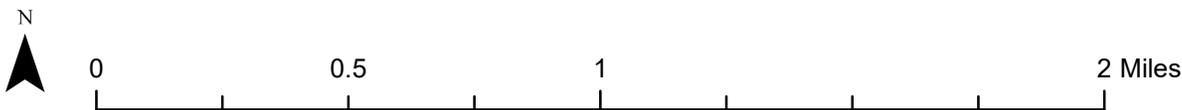
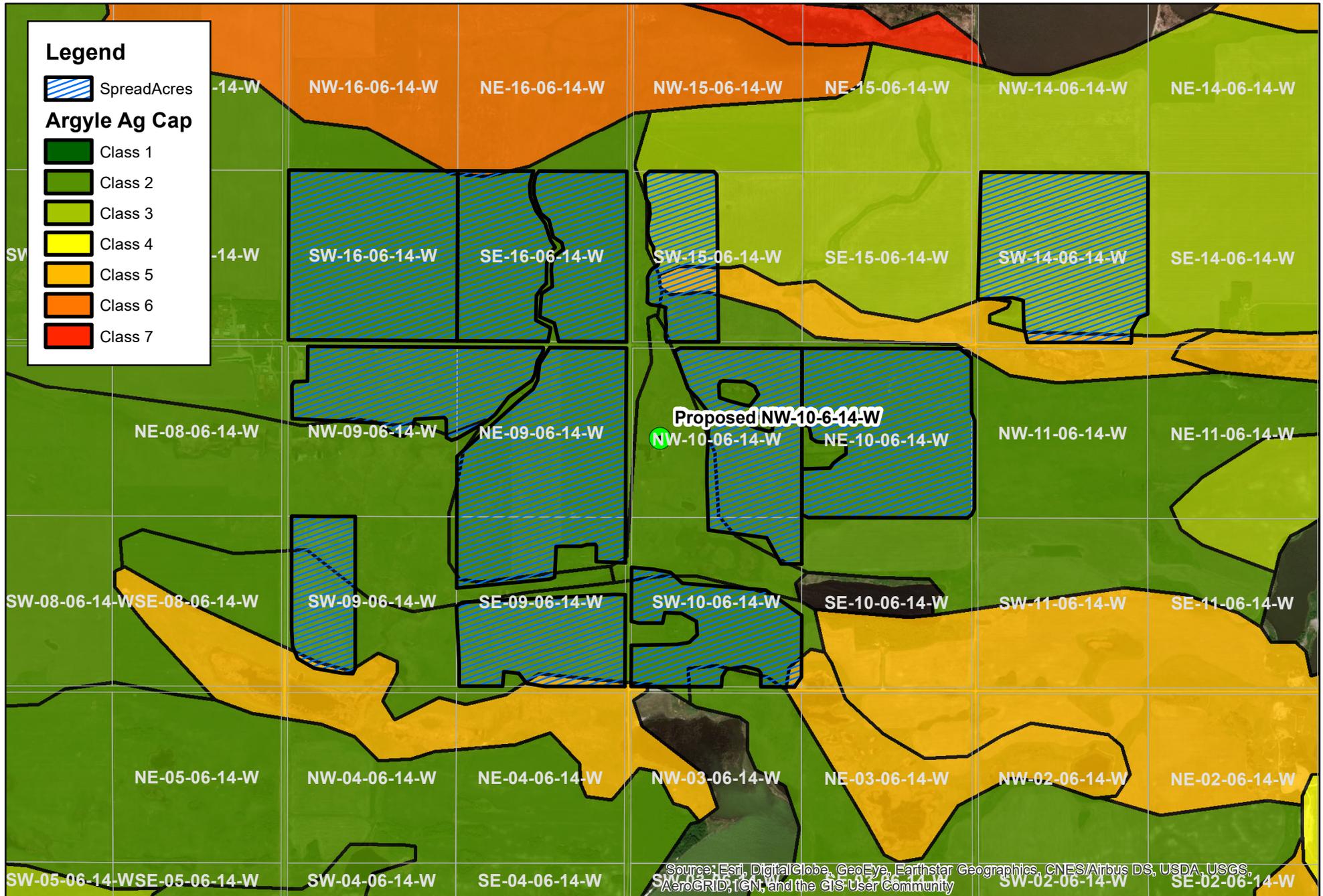
Be sure all livestock species on your farm are represented in this table, not just the livestock in the proposed expansion.

4 - Land Base Summary**Operation Name:** Enter the operation name on the livestock tab(s)

Nutrients Excreted	lbs
Nitrogen	137946
Phosphorus (P2O5)	76979
Crop Nutrient Use	
	lb/ac
Crop N Uptake	117.5
Crop Phosphorus (P2O5) Removal	36.8
Operation-specific Phosphorus (P2O5) Credit	73.5
Land Available	
	1280
Land Base Required	
	acres
Acres for Nitrogen	1174
Acres for Phosphorus (P2O5)	1047
Phosphorus Balance	
	acres
Acres for Phosphorus Balance (1X)	2094

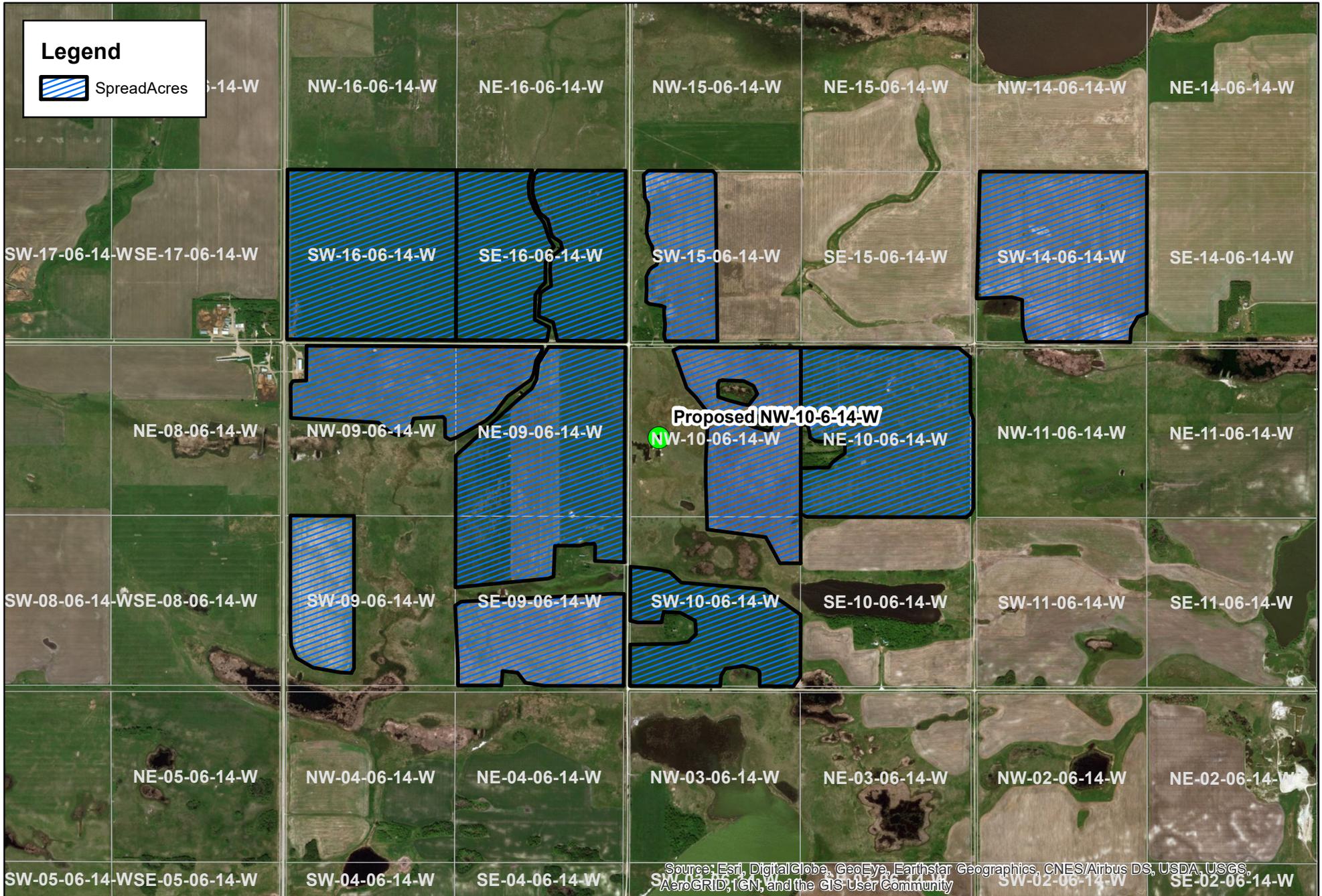
Last revised October 16, 2018

Proposed Site [NW-10-6-14-W] - Spread Acres & Ag Capability



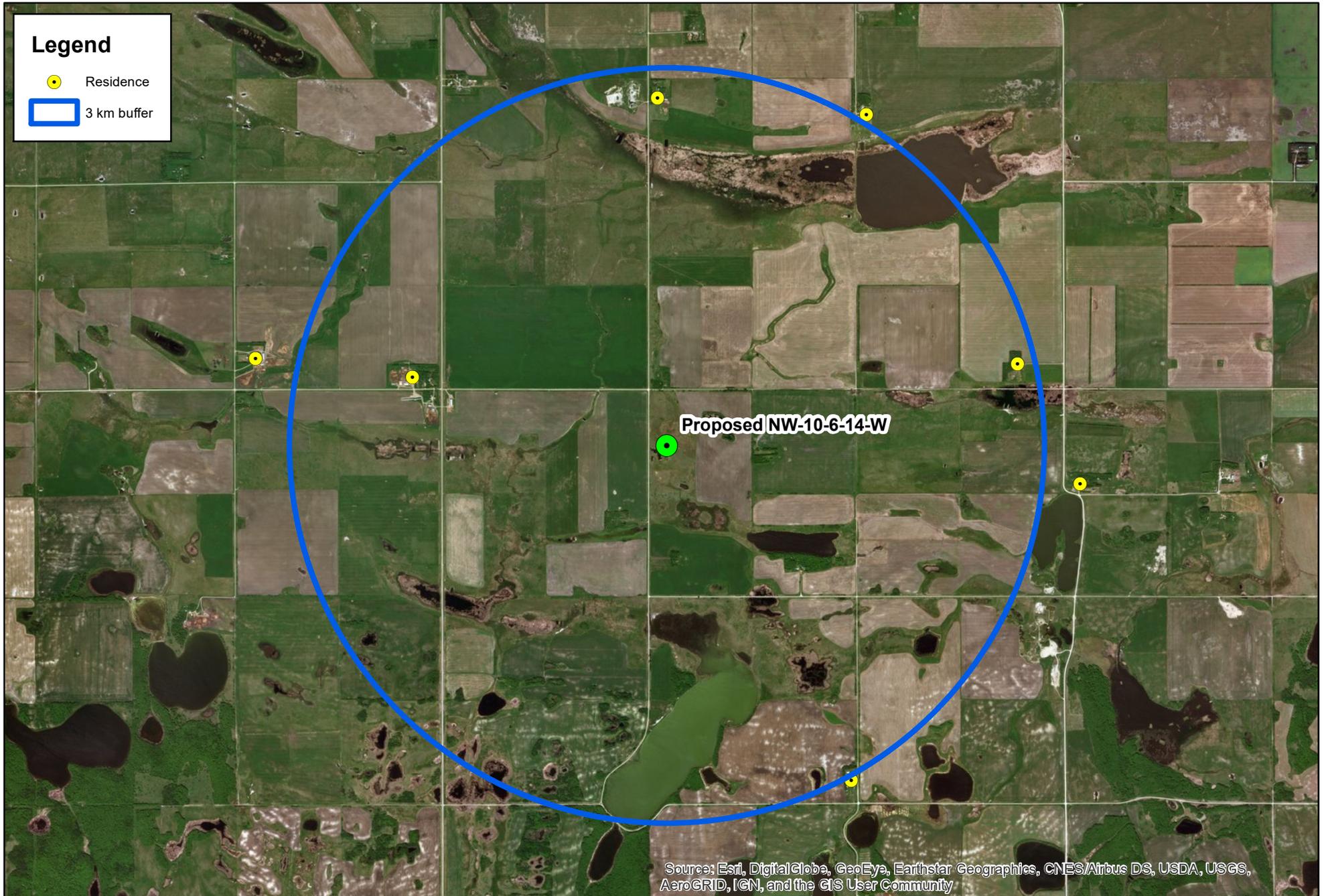
Prepared by:
 Kieran Hamm
 Nutrient Management Coordinator
 HyLife Ltd.

Proposed Site [NW-10-6-14-W] - Spread Acres



Prepared by:
Kieran Hamm
Nutrient Management Coordinator
HyLife Ltd.

Proposed Site [NW-10-6-14-W] - Residence within 3km

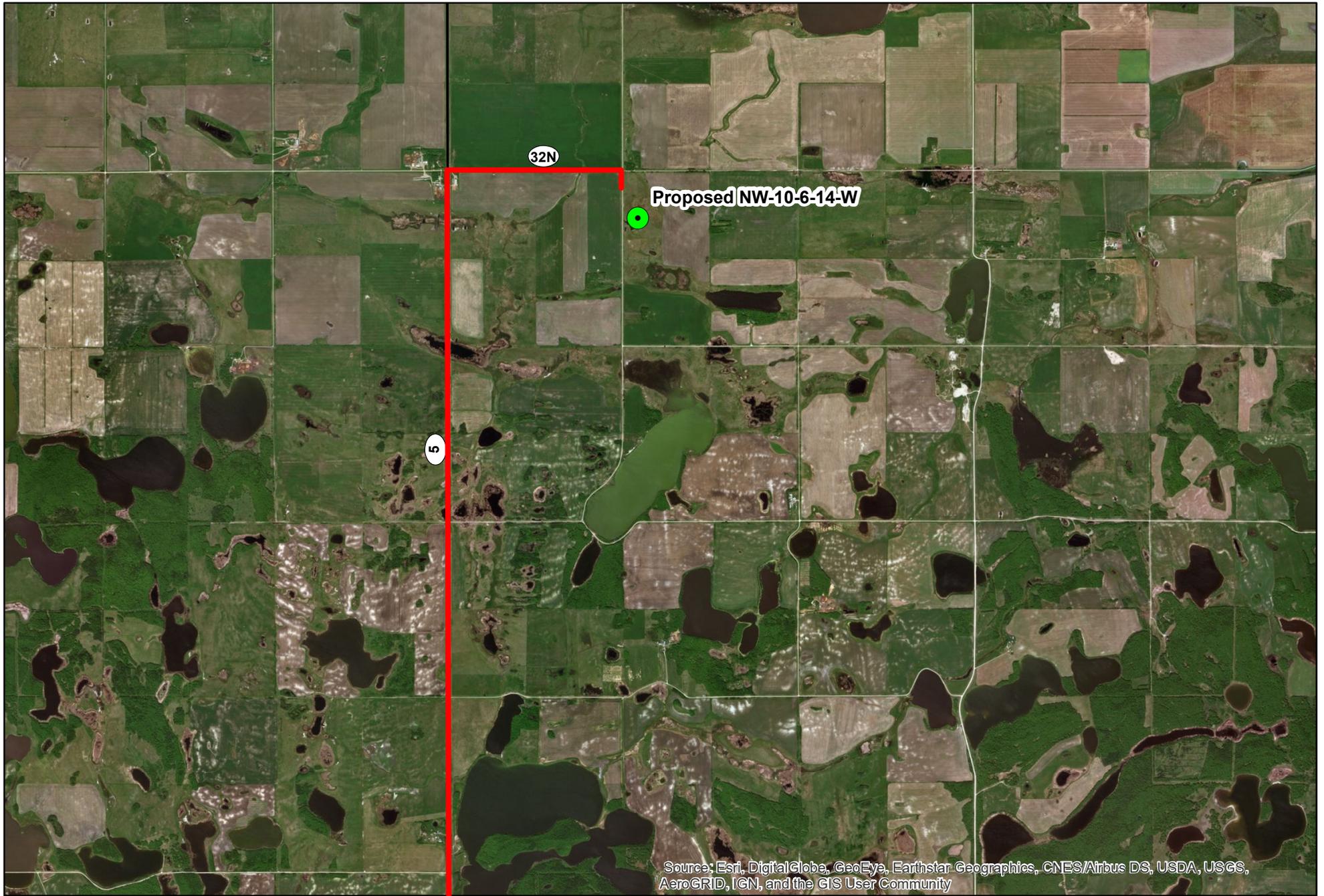


0 0.75 1.5 3 Miles

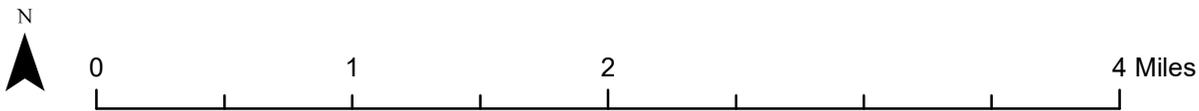


Prepared by:
Kieran Hamm
Nutrient Management Coordinator
HyLife Ltd.

Truck Haul Route



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



Prepared by:
Kieran Hamm
Nutrient Management Coordinator
HyLife Ltd.

ADDITIONAL INFORMATION

Additional Notes to Section 7.5 Groundwater Protection

- We safeguard ground water quality and supply by carefully managing all our operation in manner that meets strict environmental requirements.
- Barns are not located in groundwater pollution hazard areas identified by government and background studies to the local development plan.
- Manure nutrient is stored in an engineer designed and certified earthen storage and is approved by Manitoba Sustainable Development before use.
- HyLife will monitor test samples from the sump pit that connects to the tile drainage system around the proposed earthen manure storage perimeter if applicable. Test sampling results will be submitted annually to Manitoba Sustainable Development.
- HyLife will comply fully within the approved annual groundwater withdrawal limit set by Manitoba Sustainable Development's Water Licensing Branch.

Addition Notes to Section 8.4 Odour Control Measures

- Odour is best managed through barn cleanliness and hygiene which is accomplished through barn design (pen configurations), the barn environment (temperature and air flow) in the barns and management
- We have incorporated current technology for ventilation and climate control in the barns for the comfort of pigs and ensuring a clean environment.
- The equipment is being used in other HyLife barns and has a proven track record of success.

Additional Notes to Section 8.5 Manure Treatment

- Previous criteria and Confirmation Letter from Manitoba Pork Council relating to the Hog Production Pilot Protocol is no longer applicable.

Additional Notes to Section 10 Project Site Description: Land Use Planning Considerations

- We have carefully explored potential development sites in the Argyle area. HyLife chose this proposed site because it is firstly on open, designated agricultural crop land that is being actively farmed. Thus neighboring land will be able to sustainably utilize the manure as a fertilizer for crop production. In turn, area farmers will be able to reduce their crop fertilizer input costs.
- This site also has good road access, hydro, good drainage, good topography, and groundwater supply. This site also allows us to exceed all government siting and setback requirements from residences and designated land uses and designated crown land.
- We also meet and indeed for the most part, exceed all provincial manure storage separation distances from property boundaries set by Manitoba regulations.

Additional Notes to Section 11.0 Truck Haul Routes and Access Points

- For this 24,000 head pork production operation, there will typically be 3 to 4 feed trucks and 6 to 8 livestock trucks per week.
- The Municipality already maintains an existing network of municipal roads in the rural area and will determine which route we will use.

Additional Notes:

HyLife Community Consultation on Development Site & Proposal

- We have reached out to inform the community about our prospective plans in the area. We met and talked to as many area farmers and residents around the proposed site.
- HyLife also held an informal Public Open House on our development proposals on April 17, 2019 to further inform residents and stakeholders in the community. While it was not requirements to consult early with neighbours in the site area nor to hold a Public Open House, we felt it was important to inform the community and to obtain their feedback.

Thank you for your information request. I completed a search of the Manitoba Conservation Data Centre's (CDC) rare species database for your area of interest. This includes the primary location: NW-10-006-14W1; and a two kilometer radius buffer from the edge of the location boundary.

The search resulted in the following occurrences:

Within the footprint or primary location(s):

NW-10-006-14W1: No listed or tracked species occurrences at this time.

Within 2km of the footprint boundary:

TAXGROUP	SCINAME	COMNAME	SRANK	ESEA	SARA	COSEWIC
Vertebrate Animal	Ambystoma mavortium	(Western Tiger Salamander)	S4S5	NA	Special Concern	Special Concern
Vertebrate Animal	Buteo regalis	(Ferruginous Hawk)	S1B	Endangered	Threatened	Threatened
Vertebrate Animal	Lanius ludovicianus excubitorides	(Loggerhead Shrike)	S1B	Endangered	Threatened	Threatened

General area records low locational accuracy:

TAXGROUP	SCINAME	COMNAME	SRANK	ESEA	SARA	COSEWIC
Vascular Plant	Nassella viridula	(Green Needle Grass)	S3S4	NA	NA	NA

Found in broader area and similar habitat:

TAXGROUP	SCINAME	COMNAME	SRANK	ESEA	SARA	COSEWIC
Vertebrate Animal	Ammodramus savannarum	(Grasshopper Sparrow)	S3B	NA	NA	NA
Vertebrate Animal	Calcarius ornatus	(Chestnut-collared Longspur)	S2B	Endangered	Threatened	Threatened
Vertebrate Animal	Anthus spragueii	(Sprague's Pipit)	S2B	Threatened	Threatened	Threatened
Vertebrate Animal	Dolichonyx oryzivorus	(Bobolink)	S4B	NA	Threatened	Threatened

Further information on this ranking system can be found on our website at: <http://www.natureserve.org/conservation-tools/conservation-status-assessment>.

These designations can be found at:

<http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php>,

<https://www.canada.ca/en/environment-climate-change/services/committee-status-endangered-wildlife.html> and <http://www.sararegistry.gc.ca/default.asp?lang=En&n=24F7211B-1>.

Manitoba's recommended setback distances can be found at: https://www.gov.mb.ca/sd/pubs/conservation-data-centre/mbcdc_bird_setbacks.pdf.

The information provided in this letter is based on existing data known to the Manitoba CDC of the Wildlife and Fisheries Branch at the time of the request. These data are dependent on the research and observations of CDC staff and others who have shared their data, and reflect our current state of knowledge. **An absence of data does not confirm the absence of any rare or endangered species.** Many areas of the province have never been thoroughly surveyed, however, and the absence of data in any particular geographic area does not necessarily mean that species or ecological communities of concern are not present. The information should, therefore, not be regarded as a final statement on the occurrence of any species of concern nor should it substitute for on-site surveys for species or environmental assessments. Also, because our Biotics database is continually updated and because information requests are evaluated by type of action, any given response is only appropriate for its respective request.

Please contact the Manitoba CDC for an update on this natural heritage information if more than six months passes before it is utilised.

Third party requests for products wholly or partially derived from the Biotics database must be approved by the Manitoba CDC before information is released. Once approved, the primary user will identify the Manitoba CDC as data contributors on any map or publication using data from our database, as the Manitoba Conservation Data Centre; Wildlife and Fisheries Branch, Manitoba Sustainable Development.

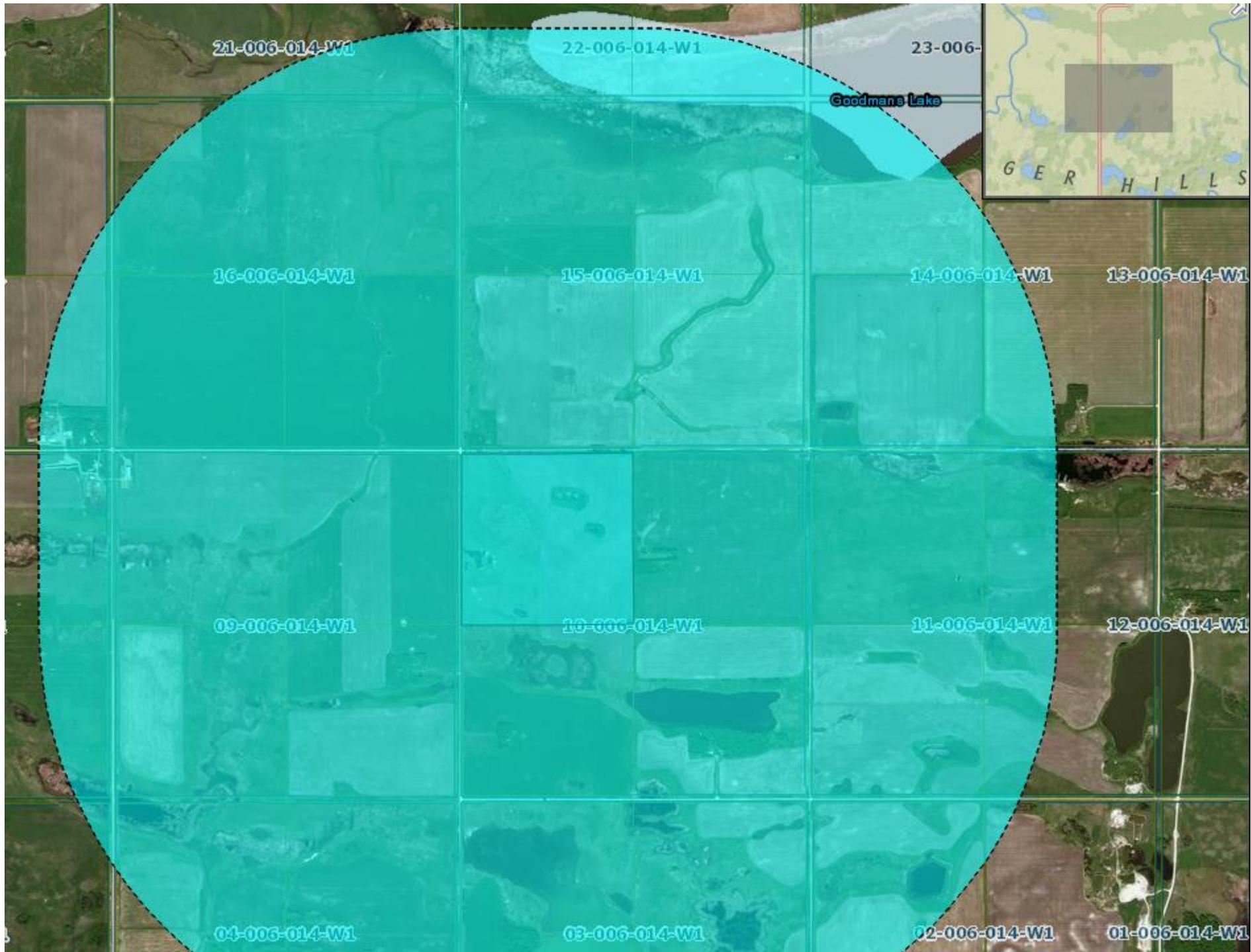
This letter is for information purposes only - it does not constitute consent or approval of the proposed project or activity, nor does it negate the need for any permits or approvals required by the Province of Manitoba.

We would be interested in receiving a copy of the results of any field surveys that you may undertake, to update our database with the most current knowledge of the area.

If you have any questions or require further information contact me directly at (204) 945-7760.

Colin

Reference screen clip:



Colin Murray
Information Manager
Manitoba Conservation Data Centre
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