

# R.M. OF KILLARNEY- TURTLE MOUNTAIN



0 5  
SCALE IN KILOMETRES

PROVINCE OF MANITOBA  
INFRASTRUCTURE  
HIGHWAY PLANNING AND DESIGN BRANCH  
GEOGRAPHIC & RECORDS MANAGEMENT SECTION  
WINNIPEG  
JANUARY 1, 2015

## LEGEND

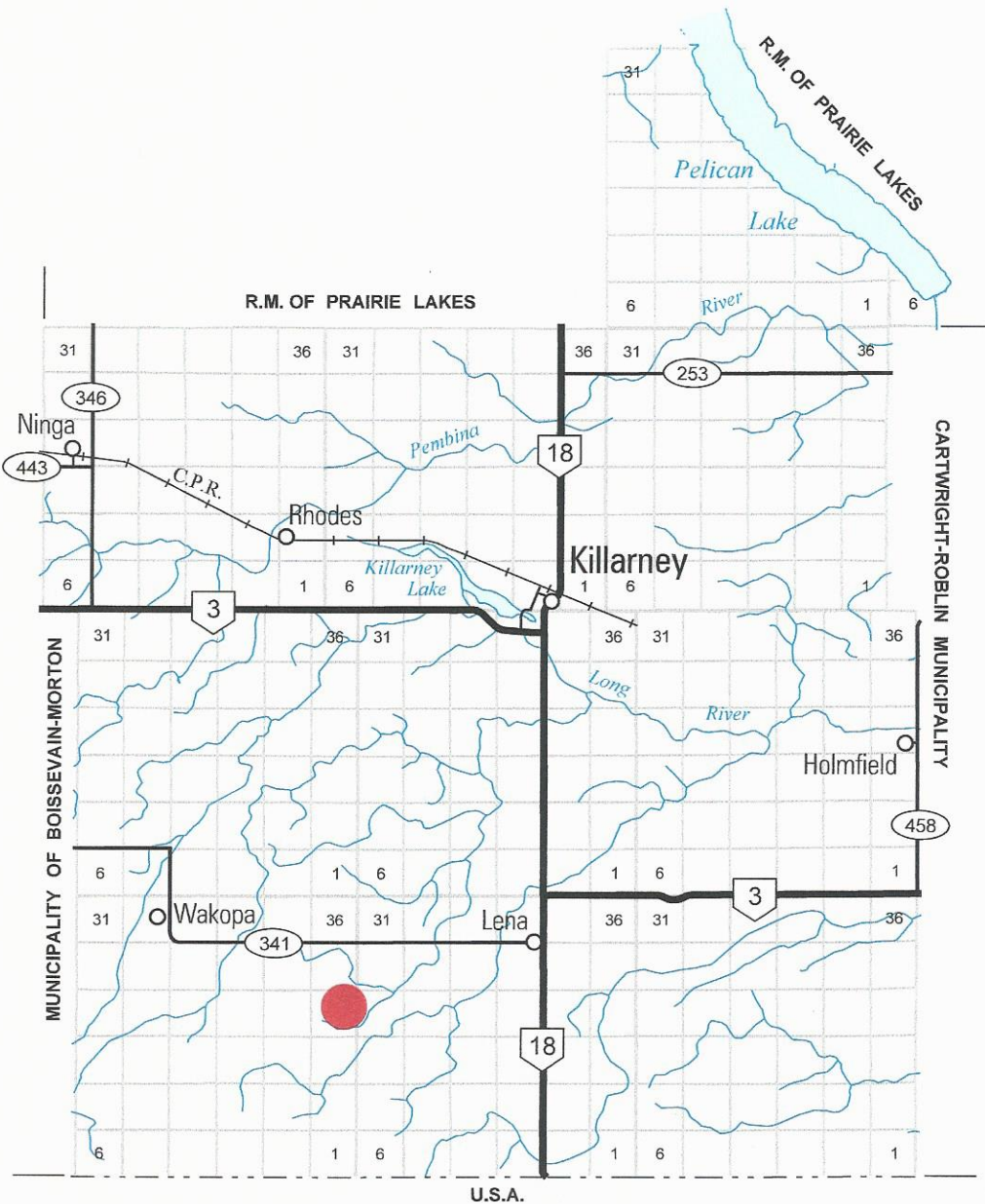
PROVINCIAL TRUNK HIGHWAYS		ACCESS ROADS	
PROVINCIAL ROADS		RAILWAYS	
		NAPA SITE	

Tp. 4

Tp. 3

Tp. 2

Tp. 1



Rge. 18W.

Rge. 17W.

Rge. 16W.

SHEET 1 OF 1

# R.M. OF KILLARNEY-TURTLE MOUNTAIN



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INFRASTRUCTURE  
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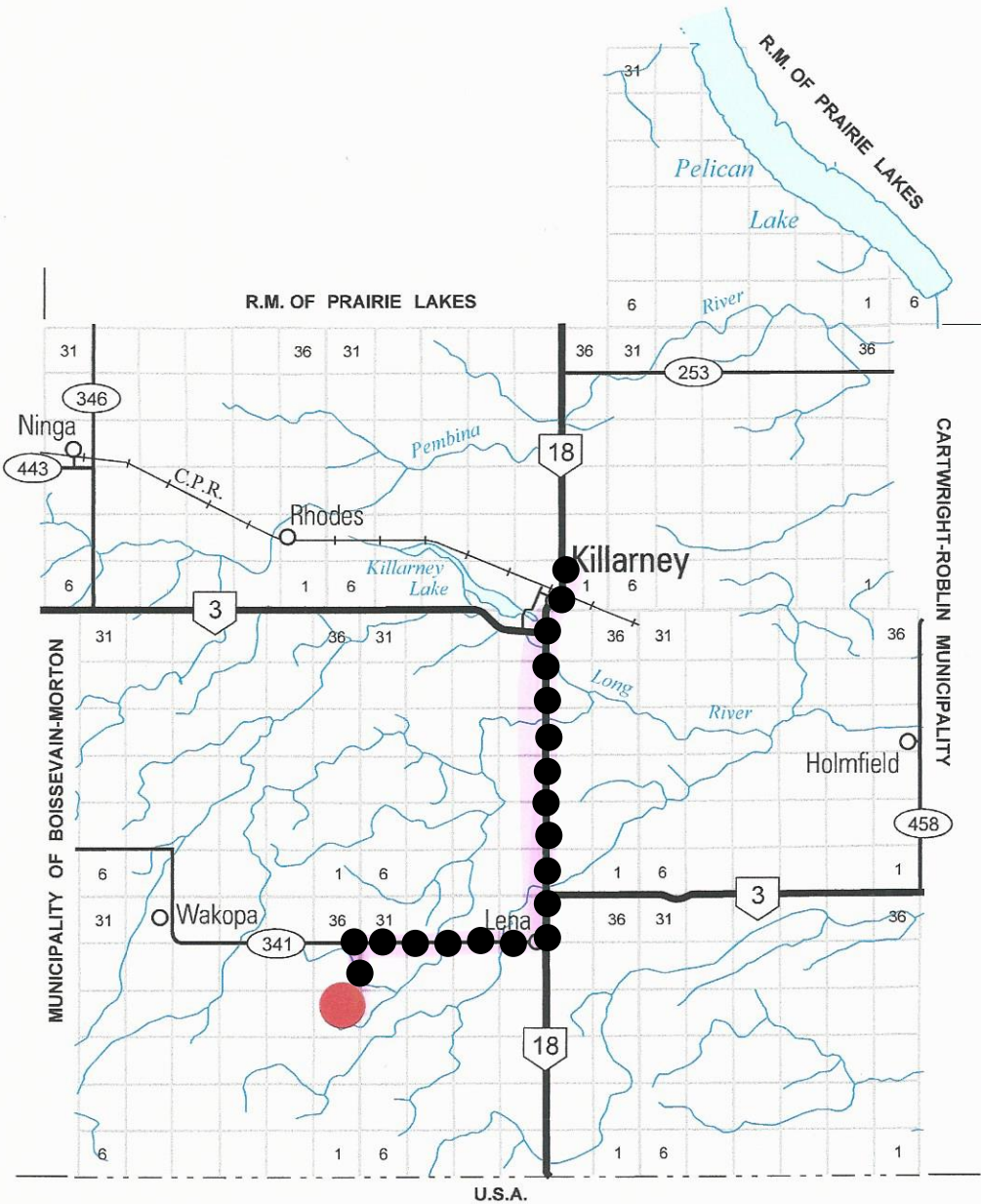
PROVINCIAL TRUNK HIGHWAYS		TRUCK	
PROVINCIAL ROADS		ACCESS ROADS	
		RAILWAYS	

Tp. 4

Tp. 3

Tp. 2

Tp. 1



Rge. 18W.

Rge. 17W.

Rge. 16W.

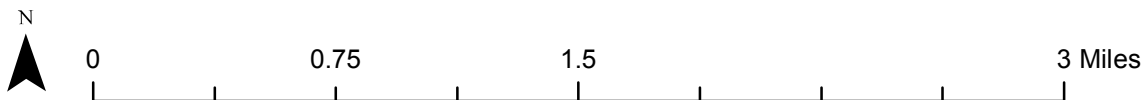
SHEET 1 OF 1

**Manure Application Field Characteristics Table - Napa**

	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	NE-18-01-17-W	Killarney-Turtle Mountain	A	160	6	154	3TM/2WT/5W	11	Rural Area	AG - Agricultural General
2	NE-19-01-17-W	Killarney-Turtle Mountain	A	160	5	155	2TPW	10	Rural Area	AG - Agricultural General
3	NE-24-01-18W	Killarney-Turtle Mountain	A	160	110	50	2TPW/5W	9	Rural Area	AG - Agricultural General
4	NE-25-1-18W	Killarney-Turtle Mountain	A	160	39	121	2TW	13	Rural Area	AG - Agricultural General
5	NE-30-1-17W	Killarney-Turtle Mountain	A	160	14	146	2T/2W/5W	8	Rural Area	AG - Agricultural General
6	NW-13-01-18-W	Killarney-Turtle Mountain	A	160	50	110	3T/2T/5W	8	Rural Area	AG - Agricultural General
7	NW-18-01-17-W	Killarney-Turtle Mountain	A	160	27	133	3IMT/2MWT/5W	8	Rural Area	AG - Agricultural General
8	NW-19-01-17-W	Killarney-Turtle Mountain	A	160	8	152	2TPW	11	Rural Area	AG - Agricultural General
9	NW-25-1-18W	Killarney-Turtle Mountain	A	160	49	111	2TW	13	Rural Area	AG - Agricultural General
10	S-19-01-17-W	Killarney-Turtle Mountain	A	320	73	247	3IMT/2MTW/5W	10	Rural Area	AG - Agricultural General
11	SE-13-01-18-W	Killarney-Turtle Mountain	A	160	24	136	3ITM/2TMW/5W	13	Rural Area	AG - Agricultural General
12	SE-24-01-18-W	Killarney-Turtle Mountain	A	160	16	144	2TPW/5W	9	Rural Area	AG - Agricultural General
13	SE-25-01-18-W	Killarney-Turtle Mountain	A	160	3	157	2TW	10	Rural Area	AG - Agricultural General
14	SE-36-1-18W	Killarney-Turtle Mountain	A	160	34	126	2TW	14	Rural Area	AG - Agricultural General
15	SW-18-01-17-W	Killarney-Turtle Mountain	A	160	25	135	3TM/2WT/5W	21	Rural Area	AG - Agricultural General
16	SW-25-01-18-W	Killarney-Turtle Mountain	A	160	5	155	2TW/5W/3T	10	Rural Area	AG - Agricultural General
17	SW-31-1-17W	Killarney-Turtle Mountain	A	160	37	123	2TW	6	Rural Area	AG - Agricultural General
18	SW-36-1-18W	Killarney-Turtle Mountain	A	160	39	121	2TW	7	Rural Area	AG - Agricultural General
19										
20										

Total Net Acreage for Manure						2476
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# Napa [NE-24-01-18W] - Spread Acres



Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 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 <sup>1</sup>	Current Animal Units	Proposed Number of Animals <sup>2</sup>	Proposed Number of Animal Units
Dairy <sup>3</sup>	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		-		-
	Veal calves	0.13		-		-
Beef	Beef cows including associated livestock	1.25		-		-
	Backgrounder	0.5		-		-
	Summer pasture / replacement heifers	0.625		-		-
	Feeder cattle	0.769		-		-
Pigs	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		-		-
	Growers / Finishers (51-249 lbs)	0.143		-	10,000	1,430
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:	1,430

**Footnotes:**

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

<sup>2</sup> Enter the total number of animals associated with the operation post construction or expansion.

<sup>3</sup> 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)
<b>Beef/Dairy/Bison *</b>				
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	-
<b>Horses</b>				
Horses		8	11	-
<b>Hogs</b>				
Sow (Farrow/wean)		6.5		-
Dry Sow/Boar		4		-
Feeder	10,000	3		30,000
Nursery (33 lb.)		2		-
<b>Chickens</b>				
Broilers		0.035		-
Roasters/Pullets		0.04		-
Layers		0.055		-
Breeders		0.07		-
<b>Turkeys</b>				
Turkey Growers		0.13		-
Turkey Heavies		0.16		-
<b>Sheep/Goats</b>				
Sheep/Goats		2		-
Ewes/Does		3		-
Lambs/Kids (90 lb.)		1.6		-
<b>TOTAL (IG/day)</b>				<b>30,000</b>
<b>*** TOTAL with 10% wash water</b>				<b>33,000</b>

\* 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.

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

Enter this number on page 7 of Application Form.

**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
33,000	12,045,000	IG
136,380	49,778,700	litres
0.136	50	cubic decametres (dam <sup>3</sup> )

Enter this number on page 7 of Application Form.

Conversion Factor: 1 IGPM = 4.546 l/m

Animal Type (A)	Animal Sub-type (B)	Daily Manure Production				Production Period <sup>2</sup> (Days) (G)	Number of Animals <sup>3</sup> (Capacity) (H)	Total Manure Volume (ft <sup>3</sup> ) (F <sub>X</sub> G <sub>X</sub> H)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)	
		References (C)	Manure Type (D)	Default Manure Production (ft <sup>3</sup> /animal/day) (E)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /animal/day) (F)					
Dairy (milking cows <sup>4</sup> and associated livestock)	Free Stall	Table 6, pg 59, FPGs for Dairy 1995	Semi-Solid <sup>5</sup>	3.5				-	0.0	
			Solid	3.4				-		
			Liquid <sup>5</sup>	3.5				-	0.0	
	Tie Stall		Semi-Solid <sup>5</sup>	3.6					-	0.0
			Solid	3.5					-	
			Liquid <sup>5</sup>	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				-	0.0	
	Grower / Finisher (51 - 249 lbs)		Liquid	0.25	0.25	400.00	10,000	1,000,000.00	6,230,000.0	
Animal Type	Type of Operation	Yearly Manure Production		Production Period <sup>2</sup> (Days)	Number of Birds <sup>3</sup> (Capacity)	Total Manure Volume (ft <sup>3</sup> ) (F/365xGxH)	Total Manure Volume for Semi-Solid and Liquid Manure (Imp Gal)			
		Default Manure Production (ft <sup>3</sup> /year/bird space)	Operation Manure Production <sup>1</sup> (ft <sup>3</sup> /year/bird space)							
Chickens	Broilers – floor <sup>6</sup>	Table 3, pg 85, FPGs for Poultry 2000		1.23				-		
	Broiler breeder hens <sup>7</sup>			2.3				-		
	Broiler breeder pullets <sup>6</sup>			0.99				-		
	Roasters – floor <sup>6</sup>			1.16				-		
	Layers – cage <sup>8</sup>			2.33				-	0.0	
	Layers – floor <sup>7</sup>			1.68				-		
	Layers – solid pack <sup>9</sup>							-		
	Pullets – cage <sup>8</sup>			0.71				-	0.0	
	Pullets – floor <sup>6</sup>			0.75				-		
	Pullets – solid pack <sup>9</sup>							-		
Turkeys	Broilers <sup>6</sup>	Table 3, pg 85, FPGs for Poultry 2000		2.83				-		
	Heavy toms <sup>6</sup>			5.58				-		
	Heavy hens <sup>6</sup>			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:**

- <sup>1</sup> 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.
- <sup>2</sup> 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
- <sup>3</sup> ENTER the total number of animals or birds that the operation can hold (e.g. barn or feedlot capacity).
- <sup>4</sup> Milking cows includes all lactating and dry cows.
- <sup>5</sup> Default manure production estimates for semi-solid and liquid dairy manure include manure and washwater from the milking parlour.
- <sup>6</sup> 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/ft<sup>3</sup>
- <sup>7</sup> One-third litter floor, two-thirds slatted floor. Manure and litter removed from barn at 40% moisture content, with a density of 25 lb/ft<sup>3</sup>
- <sup>8</sup> Manure removed from barn at 90% moisture content with a density of 59 lb/ft<sup>3</sup>
- <sup>9</sup> Poultry operations using litter (solid pack) must provide an estimate of yearly manure production

100mm  
90  
80  
70  
60  
50  
40  
30  
20  
10  
0

LEGAL DESCRIPTION:  
N $\frac{1}{2}$  OF NE24-1-18W

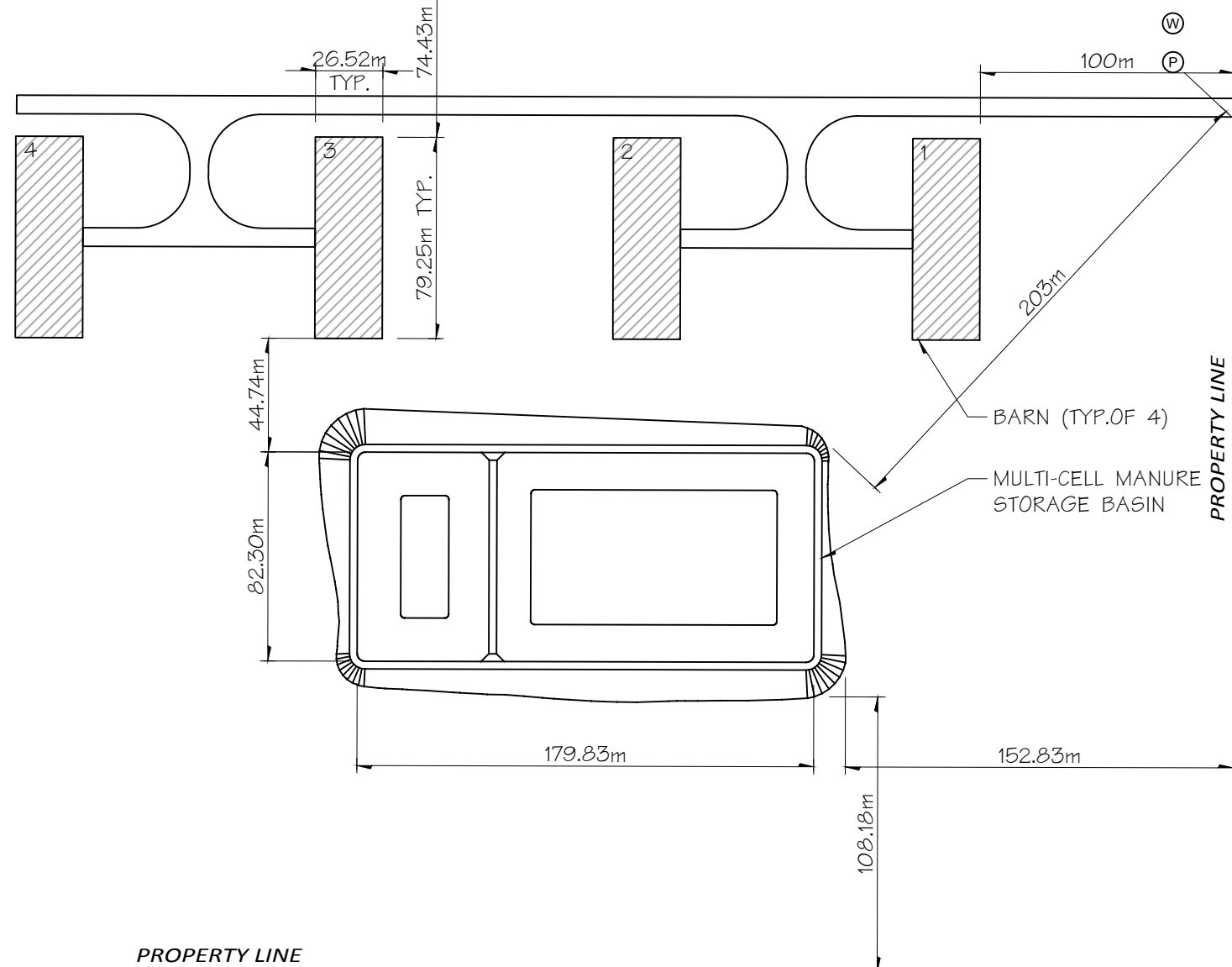
UNDEVELOPED ROAD 4N

PROPERTY LINE

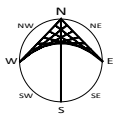
PROPERTY LINE

PROPERTY LINE

DEVELOPED ROAD



SITE DEVELOPMENT - GENERAL SITE	
ITEM	SYMBOL
PROPERTY LINE	---
WATER WELL	(W)
PIEZOMETER	(P)



**NAPA SITE LAYOUT**

SCALE: 1:2500

ISSUE (AND REVISION)		
NO.	DATE	DESCRIPTION
1	11/29/2017	ISSUED FOR CU PERMIT
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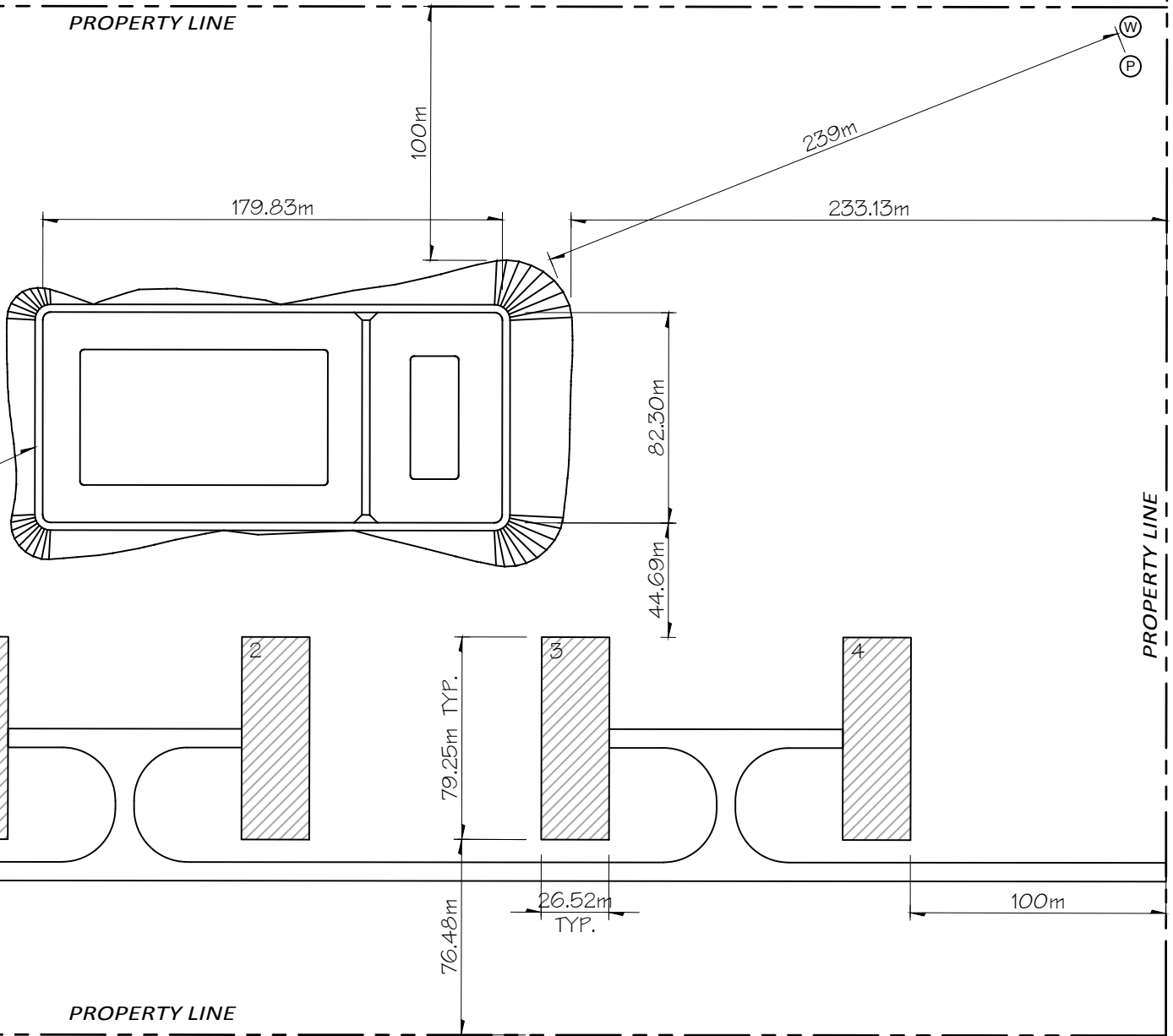
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PROJECT LOCATION	
PROJECT NUMBER	
<b>SITE LAYOUT</b>	

**C1**  
REV. 000

0 10 20 30 40 50 60 70 80 90 100mm



LEGAL DESCRIPTION:  
S½ OF 5E12-1-18W



SITE DEVELOPMENT - GENERAL SITE	
ITEM	SYMBOL
PROPERTY LINE	---
WATER WELL	⊙ W
PIEZOMETER	⊙ P

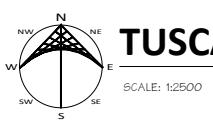
PROPERTY LINE

PROPERTY LINE

DEVELOPED ROAD

PROPERTY LINE

ROAD 1N



**TUSCANY SITE LAYOUT**

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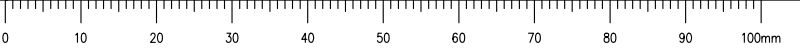
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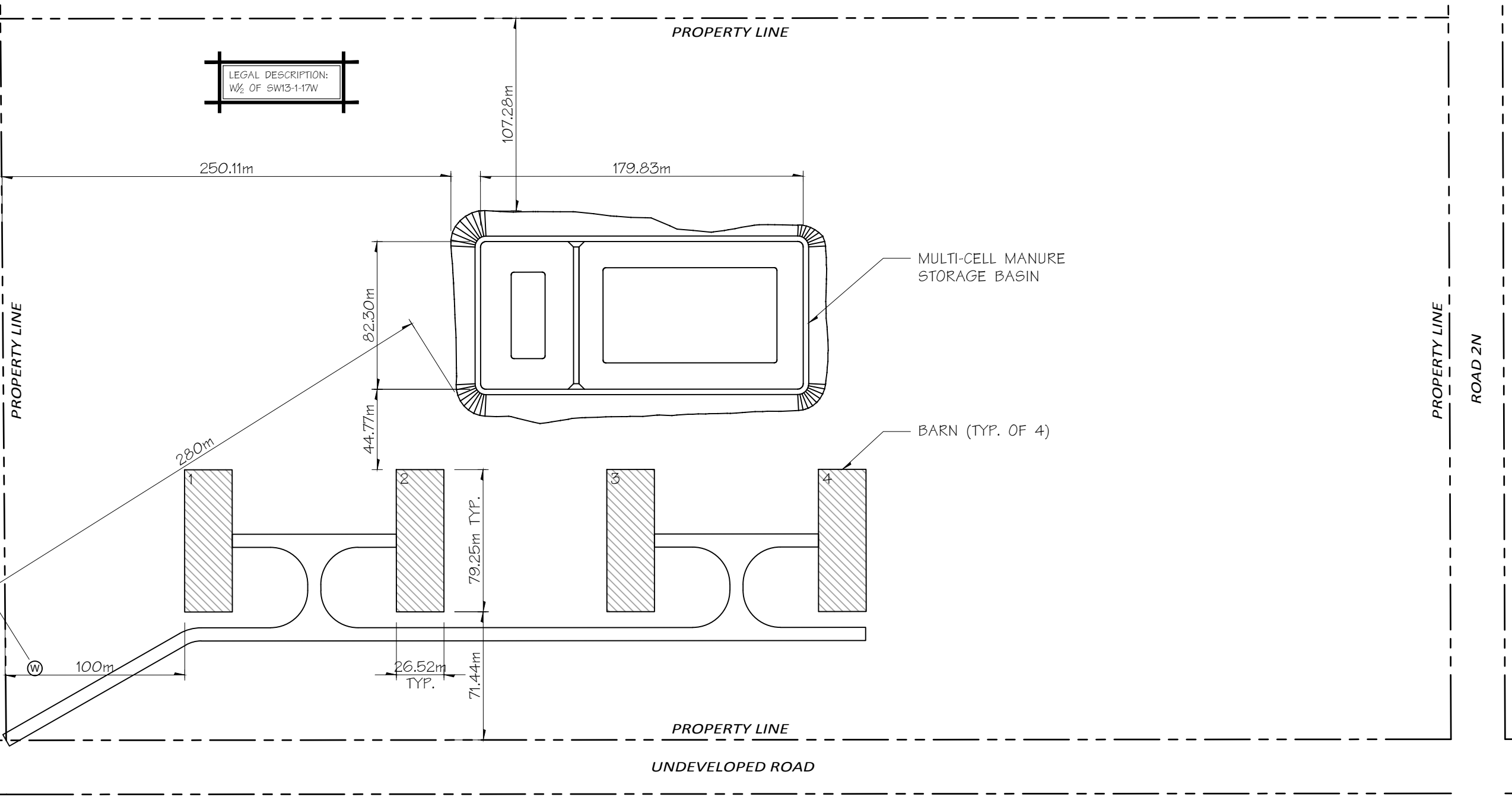
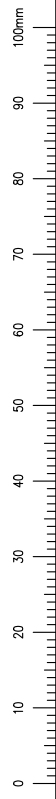
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PROJECT TITLE	<b>TUSCANY SITE</b>
PROJECT LOCATION	
PROJECT NUMBER	
<b>SITE LAYOUT</b>	

**C1**  
REV. 000





LEGAL DESCRIPTION:  
W $\frac{1}{2}$  OF SW13-1-17W

SITE DEVELOPMENT - GENERAL SITE	
ITEM	SYMBOL
PROPERTY LINE	---
WATER WELL	(W)
PIEZOMETER	(P)

PROPERTY LINE

PROPERTY LINE

ROAD 2N

UNDEVELOPED ROAD

**NIAGARA SITE LAYOUT**  
SCALE: 1:2500

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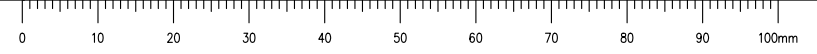
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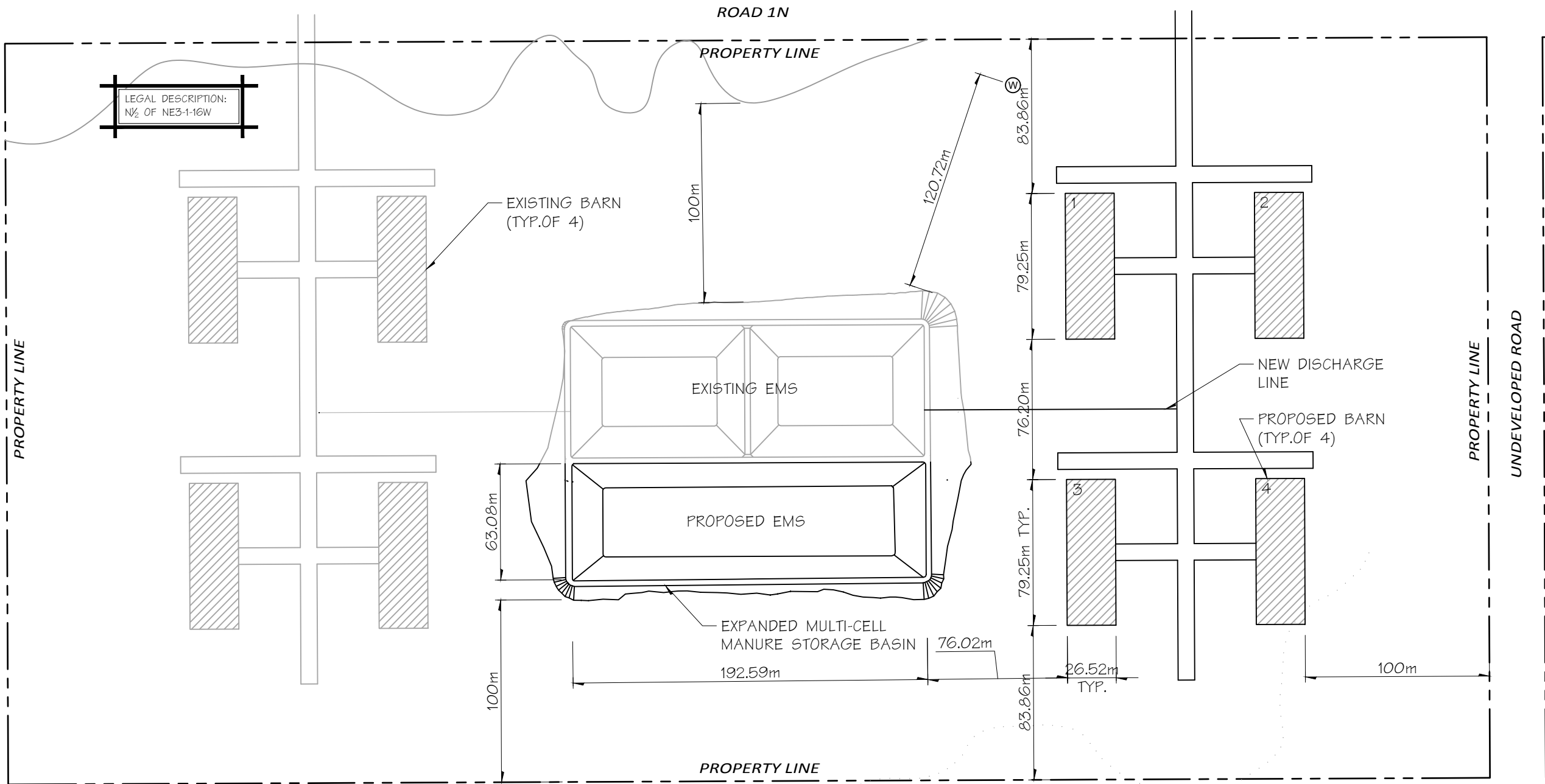
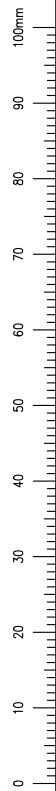
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PROJECT TITLE	<b>NIAGARA SITE</b>
PROJECT LOCATION	
PROJECT NUMBER	
<b>SITE LAYOUT</b>	

**C1**  
REV. 000





SITE DEVELOPMENT - GENERAL SITE	
ITEM	SYMBOL
PROPERTY LINE	---
WATER WELL	⊙ W
PIEZOMETER	⊙ P

**SOUTHGATE SITE LAYOUT**  
SCALE: 1:2500

ISSUE (AND REVISION)		
NO.	DATE	DESCRIPTION
1	11/29/2017	ISSUED FOR CU PERMIT

ENGINEER'S SEAL

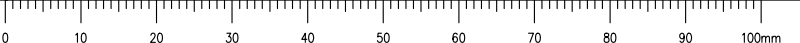
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NOV/2017	AS NOTED	

PROJECT TITLE	<b>SOUTHGATE SITE</b>
PROJECT LOCATION	
PROJECT NUMBER	
<b>SITE LAYOUT</b>	

**C1**  
REV. 0 R00



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	270 ft	170 ft	14 ft	ft	1:4	1:5	105
Secondary	270 ft	410 ft	12 ft	ft	1:4	1:5	308
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.

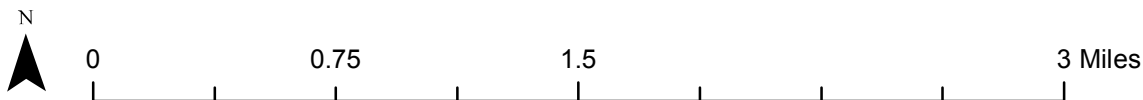


**Manure Application Field Characteristics Table - Napa**

	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	NE-18-01-17-W	Killarney-Turtle Mountain	A	160	6	154	3TM/2WT/5W	11	Rural Area	AG - Agricultural General
2	NE-19-01-17-W	Killarney-Turtle Mountain	A	160	5	155	2TPW	10	Rural Area	AG - Agricultural General
3	NE-24-01-18W	Killarney-Turtle Mountain	A	160	110	50	2TPW/5W	9	Rural Area	AG - Agricultural General
4	NE-25-1-18W	Killarney-Turtle Mountain	A	160	39	121	2TW	13	Rural Area	AG - Agricultural General
5	NE-30-1-17W	Killarney-Turtle Mountain	A	160	14	146	2T/2W/5W	8	Rural Area	AG - Agricultural General
6	NW-13-01-18-W	Killarney-Turtle Mountain	A	160	50	110	3T/2T/5W	8	Rural Area	AG - Agricultural General
7	NW-18-01-17-W	Killarney-Turtle Mountain	A	160	27	133	3IMT/2MWT/5W	8	Rural Area	AG - Agricultural General
8	NW-19-01-17-W	Killarney-Turtle Mountain	A	160	8	152	2TPW	11	Rural Area	AG - Agricultural General
9	NW-25-1-18W	Killarney-Turtle Mountain	A	160	49	111	2TW	13	Rural Area	AG - Agricultural General
10	S-19-01-17-W	Killarney-Turtle Mountain	A	320	73	247	3IMT/2MTW/5W	10	Rural Area	AG - Agricultural General
11	SE-13-01-18-W	Killarney-Turtle Mountain	A	160	24	136	3ITM/2TMW/5W	13	Rural Area	AG - Agricultural General
12	SE-24-01-18-W	Killarney-Turtle Mountain	A	160	16	144	2TPW/5W	9	Rural Area	AG - Agricultural General
13	SE-25-01-18-W	Killarney-Turtle Mountain	A	160	3	157	2TW	10	Rural Area	AG - Agricultural General
14	SE-36-1-18W	Killarney-Turtle Mountain	A	160	34	126	2TW	14	Rural Area	AG - Agricultural General
15	SW-18-01-17-W	Killarney-Turtle Mountain	A	160	25	135	3TM/2WT/5W	21	Rural Area	AG - Agricultural General
16	SW-25-01-18-W	Killarney-Turtle Mountain	A	160	5	155	2TW/5W/3T	10	Rural Area	AG - Agricultural General
17	SW-31-1-17W	Killarney-Turtle Mountain	A	160	37	123	2TW	6	Rural Area	AG - Agricultural General
18	SW-36-1-18W	Killarney-Turtle Mountain	A	160	39	121	2TW	7	Rural Area	AG - Agricultural General
19										
20										

Total Net Acreage for Manure						2476
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# Napa [NE-24-01-18W] - Spread Acres



Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake
	P2O5	N	N	Units				P2O5 (lb)	N (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	37.6	bu/ac	1238	48411	89839	148491
Corn Grain	0.44	0.97	1.53	lb/bu	115	bu/ac	124	6274	13832	21818
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		tons/ac		-	-	-
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	37.8	bu/ac	248	7874	36279	48747
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	53.6	bu/ac	866	27386	69626	97941
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
<b>Sub Total</b>							2476	89946	209577	316996
<b>Estimated Average Removal/Uptake (lb/ac)</b>								36.3	84.6	128.0
<b>Additional Acres</b>										
<b>Crop Planned on Additional Acres</b>										
<b>Total Acreage</b>							2476			

**Note:** Additional acres include acres for which crop removal or soil data is limited or unavailable.

Last revised August 20, 2014

Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
<b>Pigs</b>	Gestating Sow	0	0
	Nursing Sow	0	0
	Nursing Litter	0	0
	Live Cull Sows	0	0
	Bred Gilts	0	0
	Gilts	0	0
	Boars	0	0
	Weanlings	0	0
	Growers/finishers	259094	128009
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	0	0
	Sows, farrow to finish	0	0
	<b>Beef</b>	Mature Cows (>2 years old)	0
Bred Heifer (14 mo - 2 years)		0	0
Replacement Heifers (7 mo-14 mo)		0	0
Unweaned Calves (0-7 mo)		0	0
Bulls		0	0
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
<b>Dairy</b>		Lactating cow	0
	Dry cow	0	0
	Calf, 0-3 months	0	0
	Calf, 4-13 months	0	0
	Replacements, >13 months	0	0
	Mature Cows, plus assoc livestock	0	0
<b>Sheep</b>	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
<b>Chickens</b>	Broilers	0	0
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
<b>Layers</b>	Layer Pullets	0	0
	Layer Hens	0	0
	Breeder Pullets	0	0
	Breeder Hens	0	0
<b>Turkeys</b>	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
<b>Total</b>		<b>259094</b>	<b>128009</b>

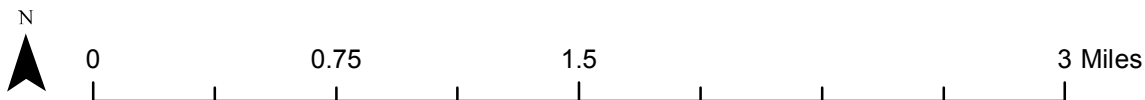
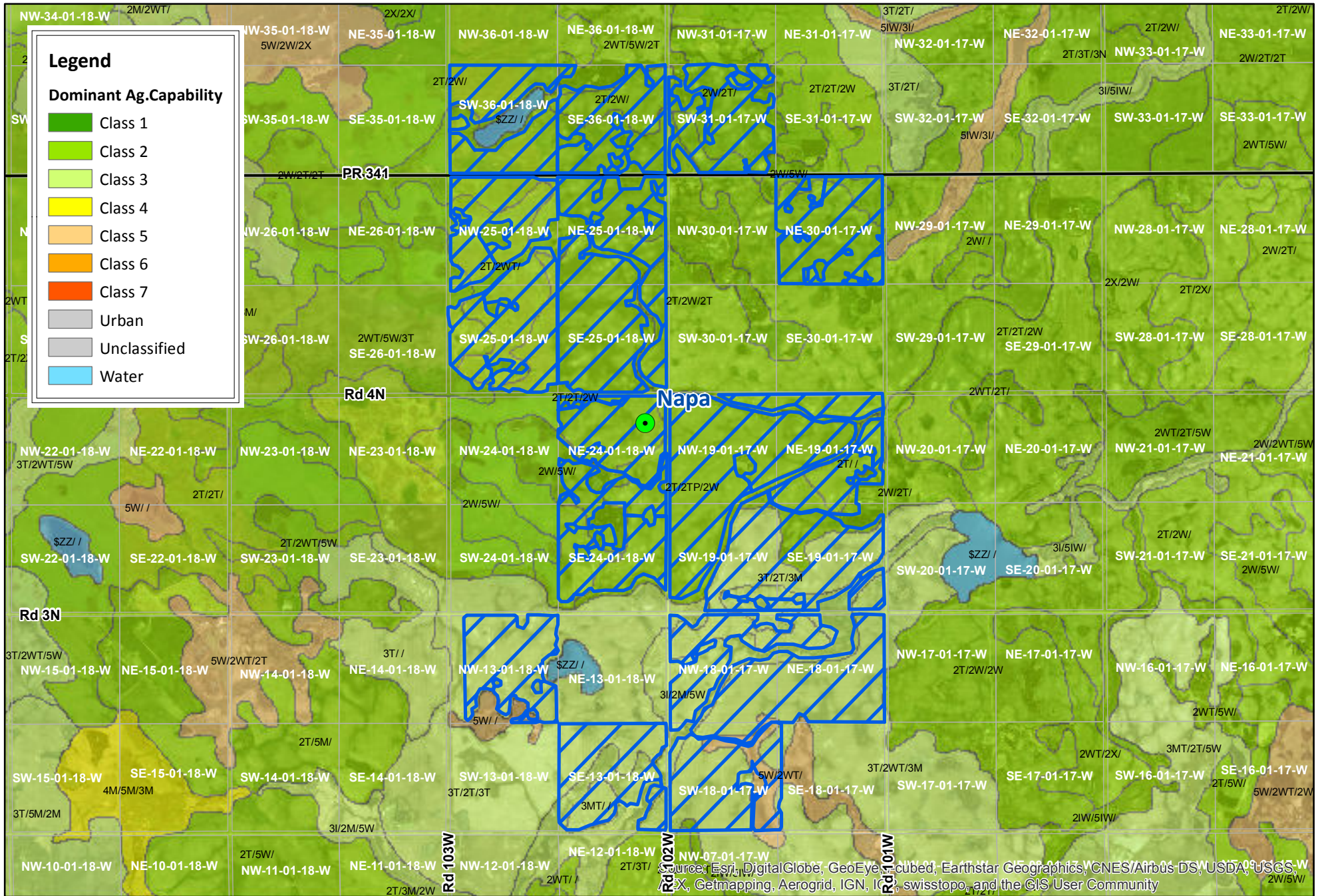
**Note:** Be sure all livestock species on your farm are represented in this table, not just the livestock in the proposed expansion.



Pig/Operation Type	Storage Type	Volatilization	Animal Numbers (Places)	Weight In (lb)	Weight Out (lb)	Average Animal Wt (lb)	Days on Feed per Cycle (days)	Number of Cycles for the Place per Year (days)	Feed Consumed Per Pig Per Day (kg/day)	Protein %	N Excreted Per Herd Adjusted for Storage N (lb/yr/herd)	Phosphorus Content of Feed (DM) %	P2O5 Excreted Per Herd Per Year (lb/yr/herd)
Gestating Sow	Liquid Uncovered Earthen	30%		447	630	539	121	3	2.3	14%	0	0.53%	0
Nursing Sow	Liquid Uncovered Earthen	30%		539	539	539	21	15.2	6.5	20%	0	0.63%	0
Nursing Litter	Liquid Uncovered Earthen	30%		3.1	13.6	8	21	15.2	0	n/a	0	n/a	0
Live Cull Sow	Liquid Uncovered Earthen	30%		630	630	630	14	26.1	2.3	14%	0	0.46%	0
Bred Gilt	Liquid Uncovered Earthen	30%		340	447	394	121	3	2.3	14%	0	0.53%	0
Gilts (Purchased)	Liquid Uncovered Earthen	30%		290	340	315	28	13.0	3.2	16%	0	0.46%	0
Boars (Purchased)	Liquid Uncovered Earthen	30%		270	660	465	365	1	2.5	14%	0	0.46%	0
Weanlings	Liquid Uncovered Earthen	30%		13.6	61.6	38	52	6.9	0.7	20%	0	0.64%	0
Growers/Finishers	Liquid Uncovered Earthen	30%	10000	61.6	280	171	112	3	2.8	16%	259094	0.46%	128009
Sows, farrow to 6.2 kg	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0
Sows, farrow to 28 kg	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0
Sows, farrow to finish	Liquid Uncovered Earthen	30%		n/a	n/a	n/a	365	1	n/a	n/a	0	n/a	0

Last Revised April 13, 2016

# Napa [NE-24-01-18W] - Spread Acres and Ag Capability



Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

**CROP ROTATION TABLE**



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

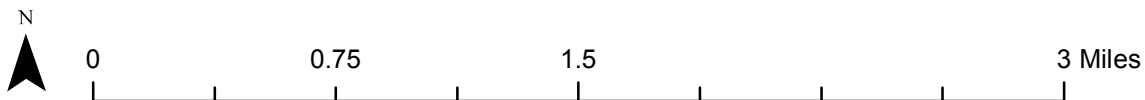
- A. List all of the crop(s) to be grown in the rotation on the acreage that will receive manure.
- B. Indicate the average acreage for each crop over the rotation. For example, if there are 720 suitable acres available for manure and approximately 40 these acres will be used to grow canola, enter 288. 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.

Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake
	P2O5	N	N	Units				(lb)	(lb)	(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	37.6	bu/ac	1238	48411	89839	148491
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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		tons/ac		-	-	-
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	37.8	bu/ac	248	7874	36279	48747
Sunflower	1.1	2.8		lb/cwt		cwt/ac		-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	53.6	bu/ac	866	27386	69626	97941
Wheat - Winter	0.51	1.04	1.35	lb/bu		bu/ac		-	-	-
<b>Sub Total</b>							2476	89946	209577	316996
<b>Estimated Average Removal/Uptake (lb/ac)</b>								36.3	84.6	128.0
<b>Additional Acres</b>										
<b>Crop Planned on Additional Acres</b>										
<b>Total Acreage</b>							2476			
<b>Note:</b> Additional acres include acres for which crop removal or soil data is limited or unavailable.										

Last revised August 20, 2014

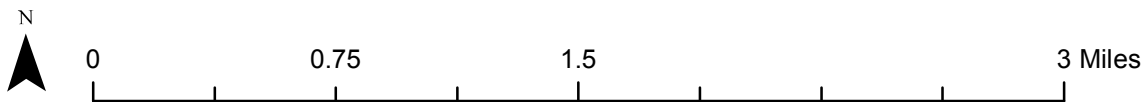
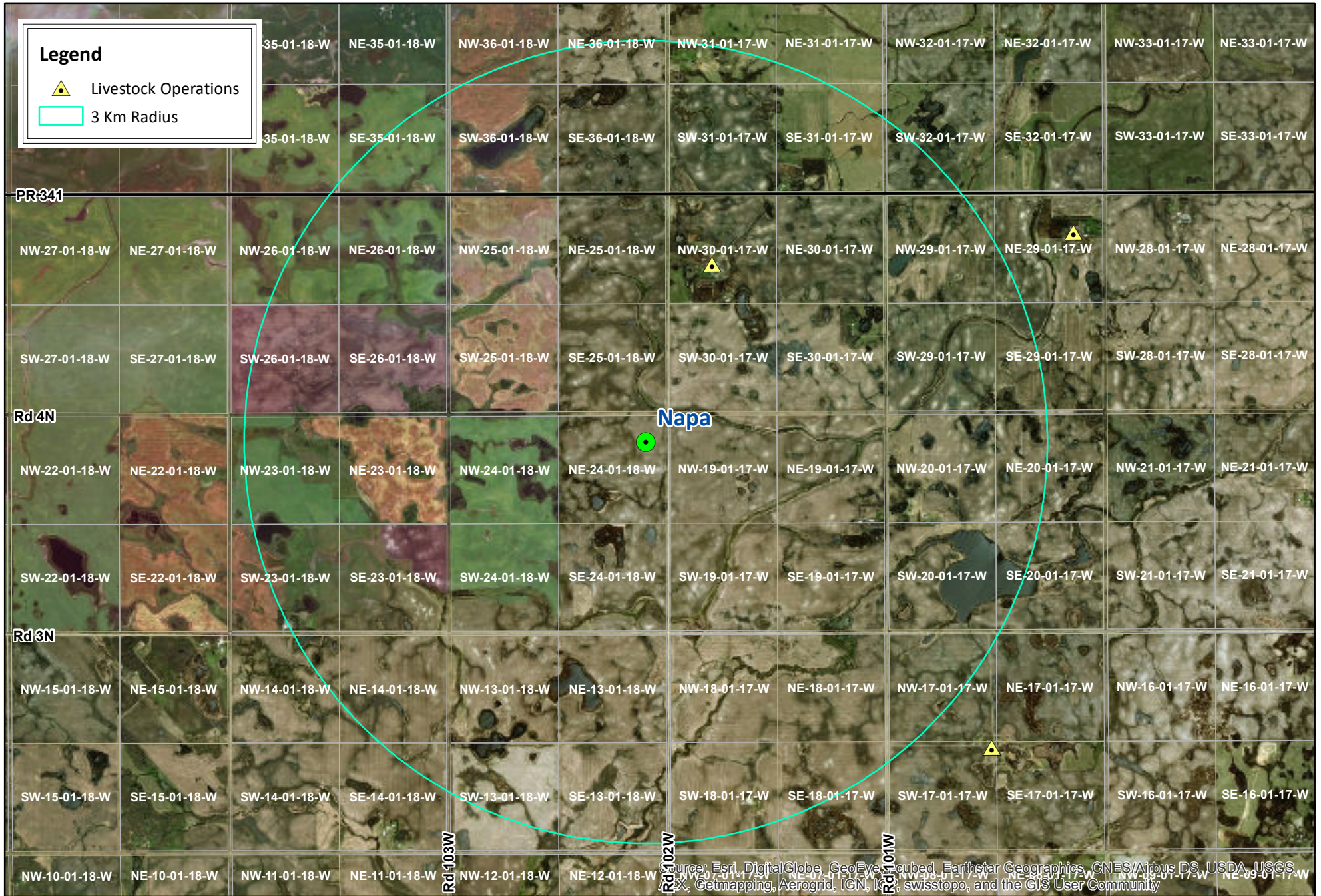
<b>Nutrients Excreted</b>		<b>lbs</b>
Nitrogen		259094
P2O5		128009
<b>Crop Nutrient Use</b>		<b>lb/ac</b>
Nitrogen Uptake		128.0
P2O5 Removal		36.3
<b>Land Base Requirements</b>		<b>acres</b>
Acres for Nitrogen Uptake		2024
Acres for 2 x P2O5 Removal		1762
Acres for 1 x P2O5 Removal		3524

# Napa [NE-24-01-18W] - Residence within 3 KM



Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

# Napa [NE-24-01-18W] - Livestock Operations within 3 KM

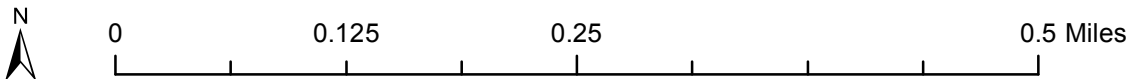


Prepared by:  
**Matt Reimer**  
 Manager of Agronomic Services  
 Hylife Ltd.

# Napa - Surface Water Drainage



Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community



Prepared by:  
Mary-Jane Orr  
Nutrient Management Specialist  
Hylife Ltd.



## Identification of Species at Risk for HyLife Livestock Operations - NAPA

On Mon, Sep 18, 2017 at 10:18 AM, Friesen, Chris (SD) <[Chris.Friesen@gov.mb.ca](mailto:Chris.Friesen@gov.mb.ca)> wrote:

Peter

Thank you for your information request. I completed a search of the MB Conservation Data Centre rare species database which resulted in the following occurrence(s):

Bobolink (*Dolichonyx oryzivorus*), S4B, COSEWIC: Threatened

NW 19-1-17W

NE 24-1-18W

Further information on this ranking system can be found on our website at <http://www.gov.mb.ca/conservation/cdc/constranks.html> and these designations can be found at <http://web2.gov.mb.ca/laws/statutes/ccsm/e111e.php>, <http://www.cosewic.gc.ca/> and [http://www.sararegistry.gc.ca/default\\_e.cfm](http://www.sararegistry.gc.ca/default_e.cfm).

Manitoba's recommended setback distances can be found at <http://www.gov.mb.ca/conservation/cdc/pubs.html>

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 our scientists and reflects 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 [\(204\) 945-7747](tel:204-945-7747).

Chris Friesen  
Coordinator  
Manitoba Conservation Data Centre  
[204-945-7747](tel:204-945-7747)  
[chris.friesen@gov.mb.ca](mailto:chris.friesen@gov.mb.ca)  
<http://www.manitoba.ca/conservation/cdc/>

**From:** Friesen, Chris (SD)  
**Sent:** September-29-17 8:13 AM  
**To:** Peter Mah <[petermahinc@gmail.com](mailto:petermahinc@gmail.com)>  
**Cc:** Sheldon Stott <[Sheldon.Stott@hylife.com](mailto:Sheldon.Stott@hylife.com)>; De Smet, Ken (SD) <[Ken.DeSmet@gov.mb.ca](mailto:Ken.DeSmet@gov.mb.ca)>  
**Subject:** Re: Identification of Species at Risk for Proposed HyLife Livestock Operations - Napa

Hi Peter

The best person to speak with regarding these bird occurrences is Ken De Smet (copied) if he hasn't already contacted you.

Cheers

Chris

**From:** De Smet, Ken (SD)  
**Sent:** 29/09/2017 12:49 PM  
**To:** Friesen, Chris (SD); Peter Mah  
**Cc:** Sheldon Stott  
**Subject:** RE: Identification of Species at Risk for Proposed HyLife Livestock Operations - Napa

Hi Chris & Peter

Just talked with Peter about the hog operation and the species/areas that we had identified as possible concerns.

Since neither Bobolink nor Loggerhead Shrike utilize cropland to any extent for nesting, and since most or all of the proposed spreading would occur after the nesting season, I see no concerns for either species.

*Cheers .....Ken*

Office: [\(204\) 945-5439](tel:2049455439)  
Fax: [\(204\) 945-3077](tel:2049453077)  
E-mail: [Ken.DeSmet@gov.mb.ca](mailto:Ken.DeSmet@gov.mb.ca)

**From:** Peter Mah <[petermahinc@gmail.com](mailto:petermahinc@gmail.com)>  
**Date:** Fri, Sep 29, 2017 at 1:24 PM  
**Subject:** RE: Identification of Species at Risk for Proposed HyLife Livestock Operations - Napa  
**To:** "De Smet, Ken (SD)" <[Ken.DeSmet@gov.mb.ca](mailto:Ken.DeSmet@gov.mb.ca)>, "Friesen, Chris (SD)" <[Chris.Friesen@gov.mb.ca](mailto:Chris.Friesen@gov.mb.ca)>  
**Cc:** Sheldon Stott <[Sheldon.Stott@hylife.com](mailto:Sheldon.Stott@hylife.com)>

Thank you Ken De Smet for contacting me and your email of today.

It was a pleasure speaking to you about our NAPA proposal and our proposed beneficial farm management practices on existing annual cropland.

Thank you too for our frank discussion to ensure we both understand how we could protect Species at Risk identified in the Conservation Data Centre data base if the proposed development posed a threat.

Your expertise and assessment that that the proposal by HyLife poses no risk requiring mitigation to preserve and protect the Bobolink and Loggerhead Shrike bird species is acknowledged.

Yours in conservation,..... and best regards.

Peter Mah, Project Consultant  
to HyLife Ltd

Sent from my Windows Phone

## **SECTION 14.0 ADDITIONAL INFORMATION**

### **Additional Notes to Section 7.5 Groundwater Protection**

- We safeguard ground water quality and supply by carefully managing all our operations 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. 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.

### **Additional 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 8.6 Manure Application Method**

- A coulter or Aerway applicator system will be used which penetrates the soil surface and allows the liquid manure to be incorporated immediately to maximize soil absorption.
- Annual manure nutrient management plans are prepared by qualified manure management planners, approved by government and applied as a crop fertilizer by GPS monitored equipment by certified applicators.

### **Additional Notes to Section 10**

#### **Project Site Description: Land Use Planning Considerations**

- We have carefully explored potential development sites in the Killarney area. HyLife chose this proposed site because it is firstly on open, designated agricultural crop land that is being actively farmed. Thus neighbouring farmers will be able to sustainably utilize the manure as 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.
- The site is also situated within the Municipality of Killarney-Turtle Mountain that affords not only a good employable population but which provides important community and commercial services and close proximity to our new \$30 million HyLife feed mill.
- Local farmers will also benefit by having have a local opportunity to sell more feed crops to the new HyLife feed mill.

### **Additional Notes to Section 11.0 Truck Haul Routes and Access Points**

- For this 10,000 head pork production operation expansion, there will typically be 8 to 12 feed trucks and 2 to 3 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. In mid-September and early October, 2017 we met and talked to as many area farmers and residents around the proposed site while we were conducting alternative site investigations and geo-technical soil and ground water testing.
- HyLife also held an informal Public Open House on our development proposals on November 8th, 2017 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.
- HyLife will continue to use our "best efforts to be a good neighbour" and good corporate citizen in the Killarney-Turtle Mountain community.



## Sustainable Development

Water Use Licensing Section  
Box 16, 200 Saulteaux Crescent  
Winnipeg, Manitoba, Canada R3J 3W3  
T 204-945-6118 F 204-948-2357  
Rob.Matthews@gov.mb.ca

August 17, 2017

File: Hylife Ltd. -21

Hylife Ltd.  
C/O Carlie Pauls  
Box 100  
La Broquerie, MB R0A 0W0

Dear Carlie Pauls:

Attached is a **Groundwater Exploration Permit** issued in response to an application dated August 11, 2017 for a Water Rights Licence for a new agricultural project on NE 24-1-18 WPM.

The Groundwater Exploration Permit authorizes Hylife Ltd. to carry out exploration test drilling, construct supply 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, acceptable to Water Use Licensing Section, must be installed on the system, to measure instantaneous pumping rate and accumulative withdrawals. This monitoring data must be made available to the department on an annual basis.

Please contact Lorraine Thibert 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,

Rob Matthews  
Manager

Attachment - Permit

cc. Lorraine Thibert, SD

## Groundwater Exploration Permit

---

Pursuant to The Water Rights Act

**Hylife Ltd.**

is hereby permitted to construct a water well or wells on the following described lands to explore for groundwater in **NE 24-1-18 WPM** 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 Association of Professional Engineers and Geoscientists of Manitoba, who would be required to:
  - Plan and supervise the drilling of boreholes, test wells, production wells, 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](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 1600 m 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 Water Use Licensing Section a technical report on drilling of boreholes and wells, pump testing of wells, 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; a plan showing the location of these wells on the property and/or GPS locations of the wells; an analysis of aquifer pumping tests; and calculations of transmissivity. The report would also indicate if any local wells are expected to be adversely affected by the proposed use of water and where these wells are located. 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 18<sup>th</sup> day of August A.D. 2017

  
for The Honourable Minister of Conservation and Water Stewardship



September 12, 2017

Dear Neighbour / Resident

Re: Proposed HyLife Livestock Development Project

HyLife is a company which started back in the 1994 as a collaboration of 2 family farm operations. Our head office is located in La Broquerie, Manitoba. Today, we are a fully integrated company that produces and sells high quality pork products around the world. While pork is our passion, we recognize that much of our success depends on our ability to produce a sustainable supply of quality pigs on the farm in our local communities.

You know us in the Killarney-Turtle Mountain area simply as HyLife. We have been here since 2004; fully invested in the community with our operations including our livestock barns, local office and now the new Killarney feed mill under construction. But you may know us even better by the many local people we employ whose families call Killarney-Turtle Mountain as home.

We dropped by today in the hopes of introducing ourselves and our preliminary HyLife finisher barn project to you.

While no formal application has been made yet, we want you to have a first-hand opportunity to learn more about the project which we hope to propose. Unfortunately, we missed you this time and look forward to getting in touch with you soon.

We would be happy to sit down with you should you have any questions.

Please contact me at (204) 355-7775 or Peter Mah at (204) 771-5117 should you wish to arrange another time to meet.

Sincerely,



Sheldon Stott,

Director of Environmental Affairs, HyLife



**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**

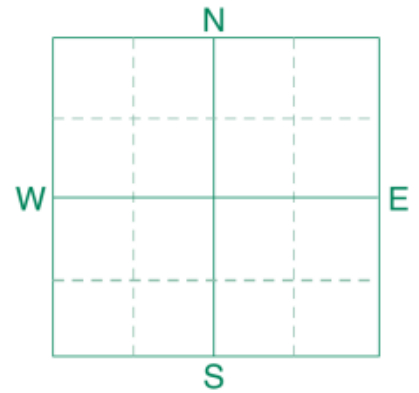
**At HyLife we focus on developing our employees, providing quality products to our customers, and working in partnership with our community.**



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

### SOIL TEST REPORT

FIELD ID **NANE18182**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **18** QTR **NE** ACRES **182**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991427** BOX # **0**  
 LAB # **NW79395**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice						
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain						
Nitrate	0-6" 6-24"	****				YIELD GOAL			YIELD GOAL			YIELD GOAL						
			9 lb/ac 12 lb/ac	50 BU			60 BU			130 BU								
	0-24"		21 lb/ac	SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES								
				Band			Band			Band								
				LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION							
Phosphorus	Olsen 11 ppm	*****				N	154		N	141		N	135					
Potassium	200 ppm	*****				P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	29	Band *	P <sub>2</sub> O <sub>5</sub>	36	Band *				
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *				
Sulfur	0-6" 6-24"	62 lb/ac 102 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			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)																		
Sol. Salts	0-6" 6-24"	0.42 mmho/cm 0.36 mmho/cm	*****			0-6"	6.8											
			*****			6-24"	8.2											

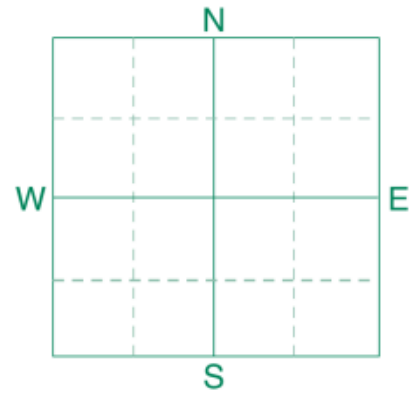
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed 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 = 52 K2O = 35 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 **NANE19105**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **19** QTR **NE** ACRES **105**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991429** BOX # **0**  
 LAB # **NW77670**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice									
		VLow Low Med High														
Nitrate	0-6" 6-24"	16 lb/ac 9 lb/ac	*****	Canola-bu	Wheat-Spring		Corn-Grain									
	0-24"	25 lb/ac		YIELD GOAL	YIELD GOAL		YIELD GOAL									
				45 BU	60 BU		130 BU									
				SUGGESTED GUIDELINES	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES									
				Band	Band		Band									
			LB/ACRE APPLICATION	LB/ACRE APPLICATION	LB/ACRE APPLICATION	LB/ACRE APPLICATION	LB/ACRE APPLICATION									
Phosphorus	Olsen 10 ppm	*****	N 133	N 137	N 131	N 131	N 131									
Potassium	223 ppm	*****	P <sub>2</sub> O <sub>5</sub> 34 Band *	P <sub>2</sub> O <sub>5</sub> 31 Band *	P <sub>2</sub> O <sub>5</sub> 39 Band *	P <sub>2</sub> O <sub>5</sub> 39	P <sub>2</sub> O <sub>5</sub> 39 Band *									
Chloride			K <sub>2</sub> O 0	K <sub>2</sub> O 10 Band (Starter)*	K <sub>2</sub> O 10	K <sub>2</sub> O 10	K <sub>2</sub> O 10 Band (2x2) *									
Sulfur	0-6" 6-24"	30 lb/ac 24 lb/ac	*****	Cl	Cl	Cl	Cl									
Boron			S 15 Band	S 5 Band (Trial)	S 5	S 5	S 5 Band (Trial)									
Zinc			B	B	B	B	B									
Iron			Zn	Zn	Zn	Zn	Zn									
Manganese			Fe	Fe	Fe	Fe	Fe									
Copper			Mn	Mn	Mn	Mn	Mn									
Magnesium			Cu	Cu	Cu	Cu	Cu									
Calcium			Mg	Mg	Mg	Mg	Mg									
Sodium			Lime	Lime	Lime	Lime	Lime									
Org.Matter																
Carbonate(CCE)																
Sol. Salts	0-6"	0.38 mmho/cm	*****	Soil pH	Buffer pH	Cation Exchange Capacity					% Base Saturation (Typical Range)					
	6-24"	0.28 mmho/cm	*****	0-6" 7.4			% Ca	% Mg	% K	% Na	% H					
				6-24" 8.3												

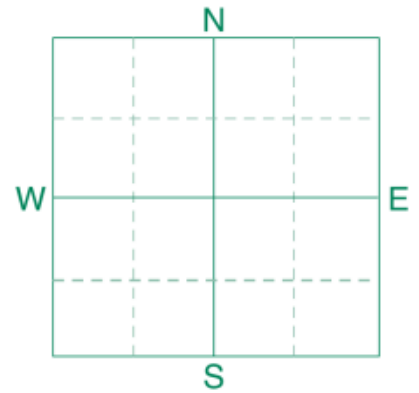
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 41 K2O = 20 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed 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 = 52 K2O = 35 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 **NANE24100**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **24** QTR **NE** ACRES **100**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991430** BOX # **0**  
 LAB # **NW77664**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice					
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain					
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL					
						50 BU			60 BU			130 BU					
	0-24"					SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES					
						Band			Band			Band					
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION				
Olsen	9 ppm	*****				N	124		N	111		N	105				
Phosphorus						P <sub>2</sub> O <sub>5</sub>	40	Band *	P <sub>2</sub> O <sub>5</sub>	33	Band *	P <sub>2</sub> O <sub>5</sub>	42	Band *			
Potassium	198 ppm	*****				K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *			
Chloride						Cl			Cl			Cl					
Sulfur	0-6" 6-24"	*****				S	15	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)																	
	0-6" 6-24"	*****				0-6" 6.6			6-24" 7.8								
Sol. Salts	0.3 mmho/cm 0.29 mmho/cm	*****															

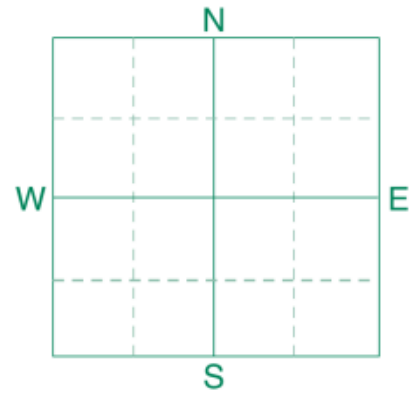
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed 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 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**



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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **NANE25121**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **25** QTR **NE** ACRES **121**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991431** BOX # **0**  
 LAB # **NW77665**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice							
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain							
Nitrate	0-6" 6-24"	19 lb/ac 27 lb/ac	*****																
	0-24"	46 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL	50 BU	60 BU	130 BU	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	Band	Band	Band	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION				
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	N	129		N	116		N	110
Phosphorus	Olsen	13 ppm	*****			P <sub>2</sub> O <sub>5</sub>	30	Band *	P <sub>2</sub> O <sub>5</sub>	25	Band *	P <sub>2</sub> O <sub>5</sub>	29	Band *					
Potassium		212 ppm	*****			K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *					
Chloride						Cl			Cl			Cl							
Sulfur	0-6" 6-24"	30 lb/ac 42 lb/ac	*****			S	15	Band	S	5	Band (Trial)	S	5	Band (Trial)					
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"	0.35 mmho/cm	*****			Soil pH	7.0												
	6-24"	0.27 mmho/cm	*****			Buffer pH	8.1												
						Cation Exchange Capacity			% Base Saturation (Typical Range)										
									% Ca	% Mg	% K	% Na	% H						

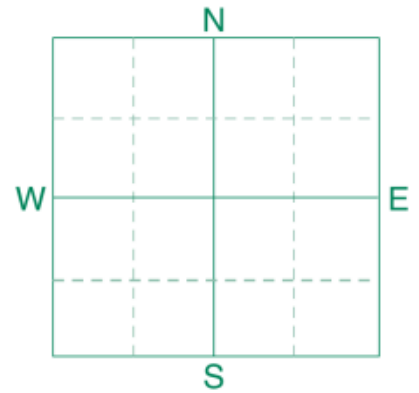
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed 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 = 52 K2O = 35 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 **NANE30146**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **30** QTR **NE** ACRES **146**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991432** BOX # **0**  
 LAB # **NW79427**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu		Wheat-Spring		Corn-Grain			
Nitrate	0-6" 6-24"	**				YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL	YIELD GOAL		
	0-24"		6 lb/ac 6 lb/ac	50 BU	60 BU	130 BU							
	12 lb/ac		SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES								
			Band	Band	Band								
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Phosphorus	Olsen 8 ppm	*****				N 163	N 150	N 144					
Potassium	203 ppm	*****				P <sub>2</sub> O <sub>5</sub> 43 Band *	P <sub>2</sub> O <sub>5</sub> 35 Band *	P <sub>2</sub> O <sub>5</sub> 46 Band *					
Chloride						K <sub>2</sub> O 0	K <sub>2</sub> O 10 Band (Starter)*	K <sub>2</sub> O 10 Band (2x2) *					
Sulfur	0-6" 6-24"	*****				Cl	Cl	Cl					
	120 +lb/ac 210 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"	*****				Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
	6-24"		0.5 mmho/cm 0.45 mmho/cm	*****						% Ca	% Mg	% K	% Na
						0-6" 7.6							
						6-24" 8.5							

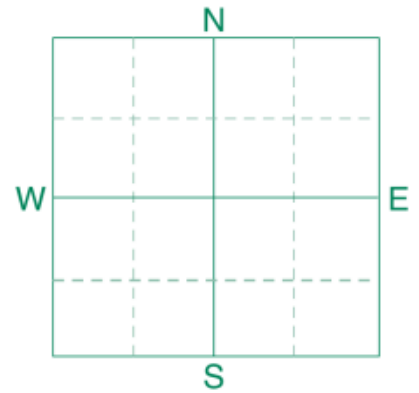
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed 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 = 52 K2O = 35 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 **NANW18103**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **18** QTR **NW** ACRES **103**  
 PREV. CROP



**SUBMITTED FOR:**  
**Napa**

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

REF # **1991434** BOX # **0**  
 LAB # **NW79074**

Date Sampled \_\_\_\_\_ Date Received **09/21/2017** Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu		Wheat-Spring		Corn-Grain			
Nitrate	0-6" 6-24"	4 lb/ac 6 lb/ac	**										
	0-24"	10 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL					
						50 BU	60 BU	130 BU					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
						Band	Band	Band					
Olsen	8 ppm	*****											
Phosphorus													
Potassium	186 ppm	*****											
Chloride													
Sulfur	0-6" 6-24"	44 lb/ac 162 lb/ac	*****										
Boron													
Zinc													
Iron													
Manganese													
Copper													
Magnesium													
Calcium													
Sodium													
Org.Matter													
Carbonate(CCE)													
Sol. Salts	0-6" 6-24"	0.4 mmho/cm 0.42 mmho/cm	*****										
						Soil pH		Buffer pH		Cation Exchange Capacity		% Base Saturation (Typical Range)	
						0-6" 7.1		6-24" 8.3				% 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 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**

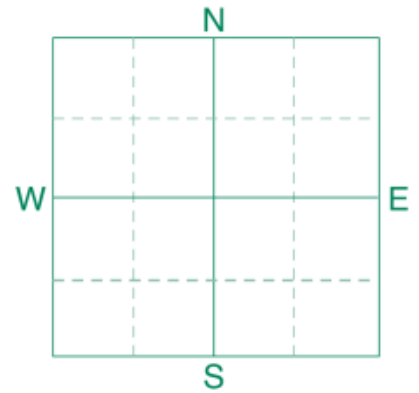




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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **NANW25111**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **25** QTR **NW** ACRES **111**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991435** BOX # **0**  
 LAB # **NW77666**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice			
		VLow	Low	Med	High	Canola-bu		Wheat-Spring		Corn-Grain			
Nitrate	0-6" 6-24"	21 lb/ac 39 lb/ac	*****										
	0-24"	60 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL					
						50 BU	60 BU	130 BU					
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES					
Phosphorus	Olsen	13 ppm	*****			Band		Band		Band			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium	184 ppm	*****			N	115	N	102	N	96			
Chloride						P <sub>2</sub> O <sub>5</sub>	30 Band *	P <sub>2</sub> O <sub>5</sub>	25 Band *	P <sub>2</sub> O <sub>5</sub>	29 Band *		
						K <sub>2</sub> O	0	K <sub>2</sub> O	10 Band (Starter)*	K <sub>2</sub> O	10 Band (2x2) *		
Sulfur	0-6" 6-24"	20 lb/ac 54 lb/ac	*****			Cl		Cl		Cl			
Boron						S	15 Band	S	5 Band (Trial)	S	5 Band (Trial)		
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"	0.25 mmho/cm	*****			0-6"	6.6						
	6-24"	0.34 mmho/cm	*****			6-24"	7.8						

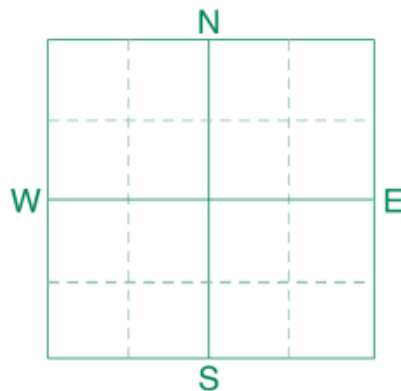
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed 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 = 52 K2O = 35 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 **NAS19207**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **19** QTR **S** ACRES **207**  
 PREV. CROP



SUBMITTED FOR:

**Napa**

SUBMITTED BY: **HY4851**

**HYLIFE LTD.**

**5 FABAS STREET**

**BOX 100**

**LA BROQUERIE, MB**

**ROA 0W0**

REF # **1991437** BOX # **0**

LAB # **NW77668**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice							
		VLow	Low	Med	High												
Nitrate	0-6" 6-24"	10 lb/ac 9 lb/ac	****					Canola-bu		Wheat-Spring		Corn-Grain					
	0-24"	19 lb/ac						YIELD GOAL		YIELD GOAL		YIELD GOAL					
								50 BU		60 BU		130 BU					
								SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES					
								Band		Band		Band					
								LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION				
Phosphorus	Olsen	10 ppm	*****			N	156			N	143			N	137		
Potassium		181 ppm	*****			P <sub>2</sub> O <sub>5</sub>	38	Band *		P <sub>2</sub> O <sub>5</sub>	31	Band *		P <sub>2</sub> O <sub>5</sub>	39	Band *	
Chloride						K <sub>2</sub> O	0			K <sub>2</sub> O	10	Band (Starter)*		K <sub>2</sub> O	11	Band *	
Sulfur	0-6" 6-24"	30 lb/ac 30 lb/ac	*****			Cl				Cl				Cl			
Boron						S	15	Band		S	5	Band (Trial)		S	5	Band (Trial)	
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"	0.36 mmho/cm	*****			Soil pH				% Base Saturation (Typical Range)							
	6-24"	0.28 mmho/cm	*****			Buffer pH				% Ca	% Mg	% K	% Na	% H			
						0-6"	6.9										
						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.

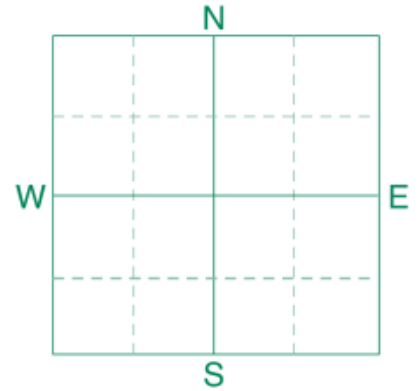
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **NASE24144**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **24** QTR **SE** ACRES **144**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991438** BOX # **0**  
 LAB # **NW77669**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation	1st Crop Choice		2nd Crop Choice		3rd Crop Choice						
		VLow Low Med High	Canola-bu		Wheat-Spring		Corn-Grain						
Nitrate	0-6" 6-24"	26 lb/ac 21 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL						
	0-24"	47 lb/ac	50 BU		60 BU		130 BU						
			SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
			Band		Band		Band						
			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION					
Olsen	9 ppm		N	128		N	115		N	109			
Phosphorus			P <sub>2</sub> O <sub>5</sub>	40	Band *	P <sub>2</sub> O <sub>5</sub>	33	Band *	P <sub>2</sub> O <sub>5</sub>	42	Band *		
Potassium	184 ppm		K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *		
Chloride			Cl			Cl			Cl				
Sulfur	0-6" 6-24"	116 lb/ac 72 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			0-6" 7.3		6-24" 8.3				% Ca	% Mg	% K	% Na	% H
Carbonate(CCE)													
Sol. Salts	0-6" 6-24"	0.55 mmho/cm 0.35 mmho/cm											

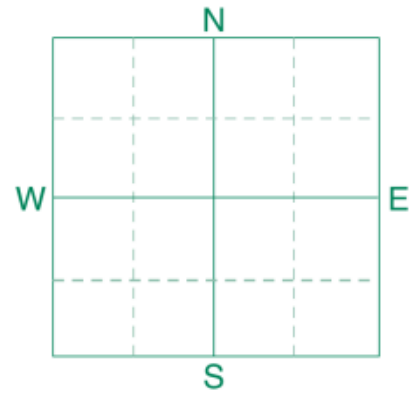
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed 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 = 52 K2O = 35 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 **NASE25157**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **25** QTR **SE** ACRES **157**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991439** BOX # **0**  
 LAB # **NW77663**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice						
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain						
Nitrate	0-6" 6-24"	6 lb/ac 6 lb/ac	**															
	0-24"	12 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL	50 BU	60 BU	130 BU	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES				
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	Band	Band	Band	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
						N	163		N	150		N	144					
Phosphorus	Olsen	10 ppm	*****															
Potassium		169 ppm	*****			P <sub>2</sub> O <sub>5</sub>	38	Band *	P <sub>2</sub> O <sub>5</sub>	31	Band *	P <sub>2</sub> O <sub>5</sub>	39	Band *				
Chloride						K <sub>2</sub> O	3	Band *	K <sub>2</sub> O	13	Band *	K <sub>2</sub> O	16	Band *				
Sulfur	0-6" 6-24"	32 lb/ac 240 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			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)																		
Sol. Salts	0-6" 6-24"	0.45 mmho/cm 0.41 mmho/cm	*****			0-6"	7.0		6-24"	8.1		% Ca	% Mg	% K	% Na	% H		

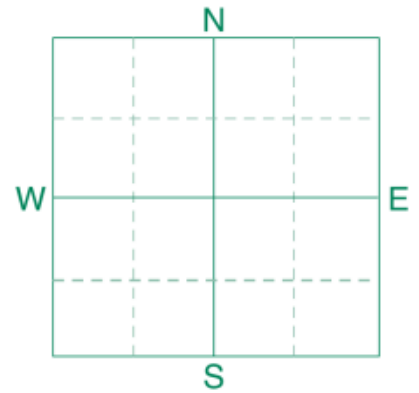
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed 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.  
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 Benson: (320) 843-4109

## SOIL TEST REPORT

FIELD ID **NASE36126**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **36** QTR **SE** ACRES **126**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991441** BOX # **0**  
 LAB # **NW79409**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice														
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain														
Nitrate	0-6" 6-24"	*****				YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL		YIELD GOAL												
						11 lb/ac 15 lb/ac	50 BU		60 BU		130 BU		130 BU													
	0-24"					26 lb/ac	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES													
							Band		Band		Band		Band													
							LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION												
Phosphorus	Olsen 14 ppm	*****				N 149		N 136		N 130		N 130														
Potassium	218 ppm	*****				P <sub>2</sub> O <sub>5</sub> 28	Band *	P <sub>2</sub> O <sub>5</sub> 23	Band *	P <sub>2</sub> O <sub>5</sub> 25	Band *	P <sub>2</sub> O <sub>5</sub> 25	Band *													
Chloride						K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (Starter)*	K <sub>2</sub> O 10	Band (2x2) *	K <sub>2</sub> O 10	Band (2x2) *													
Sulfur	0-6" 6-24"	*****				Cl		Cl		Cl		Cl														
Boron						S 10	Band	S 0		S 0		S 0														
Zinc						B		B		B		B														
Iron						Zn		Zn		Zn		Zn														
Manganese						Fe		Fe		Fe		Fe														
Copper						Mn		Mn		Mn		Mn														
Magnesium						Cu		Cu		Cu		Cu														
Calcium						Mg		Mg		Mg		Mg														
Sodium						Lime		Lime		Lime		Lime														
Org.Matter						Soil pH			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)											
Carbonate(CCE)						0-6" 7.1			6-24" 8.4			% Ca			% Mg			% K			% Na			% H		
Sol. Salts	0-6" 6-24"	*****				0.45 mmho/cm			0.28 mmho/cm			*****			*****											

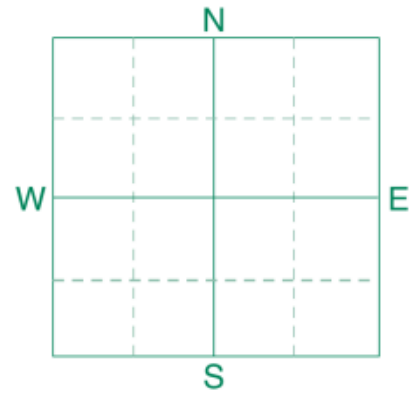
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
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**Crop 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 = 52 K2O = 35 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 **NASW18127**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **18** QTR **SW** ACRES **127**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991442** BOX # **0**  
 LAB # **NW166140**

Date Sampled

Date Received **10/26/2017**

Date Reported **11/20/2017**

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"	21 lb/ac 57 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL			
	0-24"	78 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	21 ppm	N	97	N	84	N	42		
Potassium		246 ppm	P <sub>2</sub> O <sub>5</sub>	10	Band (Starter)*	P <sub>2</sub> O <sub>5</sub>	15	Band (Starter)*		
Chloride			K <sub>2</sub> O	0	Band (Starter)*	K <sub>2</sub> O	10	Band (Starter)*		
Sulfur	0-6" 6-24"	72 lb/ac 258 lb/ac	K <sub>2</sub> O	0	Band	S	0	Band *		
Boron			Cl			B				
Zinc			S	10	Band	Zn				
Iron			B			Fe				
Manganese			Zn			Mn				
Copper			Fe			Cu				
Magnesium			Mn			Mg				
Calcium			Cu			Lime				
Sodium			Mg							
Org.Matter			Lime							
Carbonate(CCE)			Soil pH	Buffer pH	Cation Exchange Capacity	% Base Saturation (Typical Range)				
						% Ca	% Mg	% K	% Na	% H
Sol. Salts	0-6" 6-24"	0.46 mmho/cm 0.51 mmho/cm	0-6"	7.5						
			6-24"	8.1						

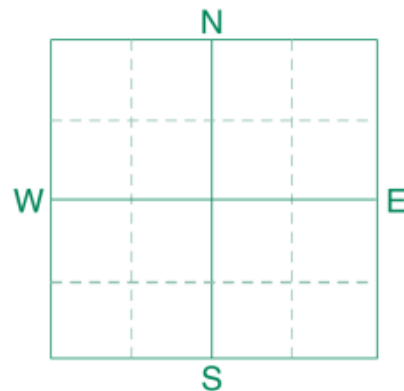
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed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



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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **NASW25155**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **25** QTR **SW** ACRES **155**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991443** BOX # **0**  
 LAB # **NW77662**

Date Sampled \_\_\_\_\_ Date Received **09/20/2017** Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 6-24"	****				Canola-bu		Wheat-Spring		Corn-Grain				
			13 lb/ac 9 lb/ac	YIELD GOAL		YIELD GOAL		YIELD GOAL						
	0-24"		22 lb/ac	50 BU		60 BU		130 BU						
				SUGGESTED GUIDELINES		SUGGESTED GUIDELINES		SUGGESTED GUIDELINES						
				Band		Band		Band						
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Phosphorus	Olsen 10 ppm	*****				N 153		N 140		N 134				
Potassium	194 ppm	*****				P <sub>2</sub> O <sub>5</sub> 38	Band *	P <sub>2</sub> O <sub>5</sub> 31	Band *	P <sub>2</sub> O <sub>5</sub> 39	Band *			
Chloride						K <sub>2</sub> O 0		K <sub>2</sub> O 10	Band (Starter)*	K <sub>2</sub> O 10	Band (2x2) *			
Sulfur	0-6" 6-24"	*****				Cl		Cl		Cl				
	24 lb/ac 60 lb/ac	*****				S 15	Band	S 5	Band (Trial)	S 5	Band (Trial)			
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														
Org.Matter														
Carbonate(CCE)														
Sol. Salts	0-6"	*****				Soil pH	Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
	6-24"		0.45 mmho/cm 0.32 mmho/cm	*****						% Ca	% Mg	% K	% Na	% H
						0-6" 6.8								
						6-24" 7.7								

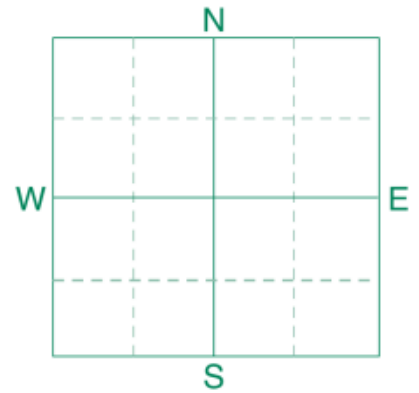
**Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.**  
**Crop 2: \* Caution: Seed Placed 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 = 52 K2O = 35 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 **NASW31123**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **31** QTR **SW** ACRES **123**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991446** BOX # **0**  
 LAB # **NW77671**

Date Sampled

Date Received **09/20/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice						
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain						
Nitrate	0-6" 6-24"	8 lb/ac 12 lb/ac	****															
	0-24"	20 lb/ac				YIELD GOAL			YIELD GOAL			YIELD GOAL						
						50 BU			60 BU			130 BU						
						SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES						
						Band			Band			Band						
						LB/ACRE	APPLICATION		LB/ACRE	APPLICATION		LB/ACRE	APPLICATION					
Phosphorus	Olsen	6 ppm	*****			N	155		N	142		N	136					
Potassium		203 ppm	*****			P <sub>2</sub> O <sub>5</sub>	48	Band *	P <sub>2</sub> O <sub>5</sub>	39	Band *	P <sub>2</sub> O <sub>5</sub>	53	Band *				
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *				
Sulfur	0-6" 6-24"	44 lb/ac 72 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			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)																		
Sol. Salts	0-6" 6-24"	0.35 mmho/cm 0.32 mmho/cm	*****			0-6"	7.8											
			*****			6-24"	8.3											

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 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.

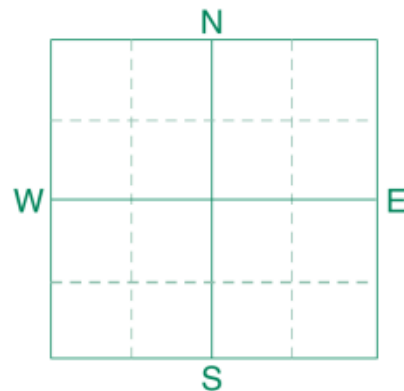




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## SOIL TEST REPORT

FIELD ID **NASW36121**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **36** QTR **SW** ACRES **121**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991447** BOX # **0**  
 LAB # **NW79078**

Date Sampled

Date Received **09/21/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High	Canola-bu		Wheat-Spring		Corn-Grain				
Nitrate	0-6" 6-24"	9 lb/ac 9 lb/ac	****				YIELD GOAL	YIELD GOAL	YIELD GOAL					
	0-24"	18 lb/ac				50 BU	60 BU	130 BU						
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES						
						Band	Band	Band						
Phosphorus	Olsen	7 ppm	*****			LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
Potassium		179 ppm	*****		N	157		N	144	N	138			
Chloride					P <sub>2</sub> O <sub>5</sub>	45	Band *	P <sub>2</sub> O <sub>5</sub>	37	P <sub>2</sub> O <sub>5</sub>	49	Band *		
Sulfur	0-6" 6-24"	18 lb/ac 24 lb/ac	*****		K <sub>2</sub> O	0		K <sub>2</sub> O	10	K <sub>2</sub> O	12	Band *		
Boron					Cl			Cl		Cl				
Zinc					S	15	Band	S	5	S	5	Band (Trial)		
Iron					B			B		B				
Manganese					Zn			Zn		Zn				
Copper					Fe			Fe		Fe				
Magnesium					Mn			Mn		Mn				
Calcium					Cu			Cu		Cu				
Sodium					Mg			Mg		Mg				
Org.Matter					Lime			Lime		Lime				
Carbonate(CCE)					Soil pH		Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)				
Sol. Salts	0-6" 6-24"	0.29 mmho/cm 0.25 mmho/cm	*****							% Ca	% Mg	% K	% Na	% H
					0-6"	7.4								
					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.

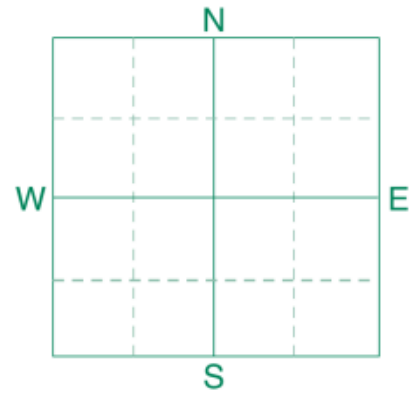
Crop 3: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 52 K2O = 35 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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### SOIL TEST REPORT

FIELD ID **NAW19242**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **17 W**  
 SECTION **19** QTR **W** ACRES **242**  
 PREV. CROP



SUBMITTED FOR:  
**Napa**

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

REF # **1991448** BOX # **0**  
 LAB # **NW77667**

Date Sampled \_\_\_\_\_ Date Received **09/20/2017** Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice						
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain						
Nitrate	0-6" 6-24"	10 lb/ac 6 lb/ac	***															
	0-24"	16 lb/ac				YIELD GOAL	YIELD GOAL	YIELD GOAL	50 BU	60 BU	130 BU	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES				
						SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	SUGGESTED GUIDELINES	Band	Band	Band	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
						LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION			
						N	159		N	146		N	140					
Phosphorus	Olsen	11 ppm	*****															
Potassium		193 ppm	*****			P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	29	Band *	P <sub>2</sub> O <sub>5</sub>	36	Band *				
Chloride						K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	10	Band (2x2) *				
Sulfur	0-6" 6-24"	100 lb/ac 30 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			Buffer pH			Cation Exchange Capacity			% Base Saturation (Typical Range)			
Carbonate(CCE)																		
Sol. Salts	0-6" 6-24"	0.48 mmho/cm 0.28 mmho/cm	*****			0-6"	7.3		6-24"	8.3		% Ca	% Mg	% K	% Na	% H		

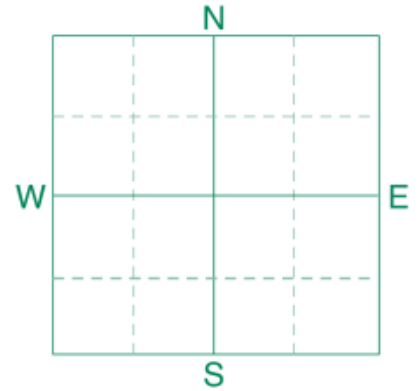
Crop 1: \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
 Crop 2: \* Caution: Seed Placed 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 = 52 K2O = 35 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 **NASE13136**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **13** QTR **SE** ACRES **136**  
 PREV. CROP



SUBMITTED FOR:

**Napa**

SUBMITTED BY: **HY4851**

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

REF # **2142887** BOX # **0**  
 LAB # **NW197972**

Date Sampled

Date Received **11/10/2017**

Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice			2nd Crop Choice			3rd Crop Choice				
		VLow	Low	Med	High	Canola-bu			Wheat-Spring			Corn-Grain				
Nitrate	0-6" 6-24"	*****				YIELD GOAL			YIELD GOAL			YIELD GOAL				
	0-24"	*****				50 BU			60 BU			160 BU				
		*****				SUGGESTED GUIDELINES			SUGGESTED GUIDELINES			SUGGESTED GUIDELINES				
		*****				Band			Band			Band				
		*****				LB/ACRE		APPLICATION	LB/ACRE		APPLICATION	LB/ACRE		APPLICATION		
Phosphorus	Olsen <b>13 ppm</b>	*****				N	<b>121</b>		N	<b>108</b>		N	<b>138</b>			
Potassium	<b>157 ppm</b>	*****				P <sub>2</sub> O <sub>5</sub>	<b>30</b>	<b>Band *</b>	P <sub>2</sub> O <sub>5</sub>	<b>25</b>	<b>Band *</b>	P <sub>2</sub> O <sub>5</sub>	<b>36</b>	<b>Band *</b>		
Chloride		*****				K <sub>2</sub> O	<b>9</b>	<b>Band *</b>	K <sub>2</sub> O	<b>18</b>	<b>Band *</b>	K <sub>2</sub> O	<b>27</b>	<b>Band *</b>		
Sulfur	0-6" 6-24"	*****				Cl			Cl			Cl				
		*****				S	<b>10</b>	<b>Band</b>	S	<b>0</b>		S	<b>0</b>			
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)				
		*****				0-6"	<b>7.3</b>					% Ca	% Mg	% K	% Na	% H
		*****				6-24"	<b>8.0</b>									

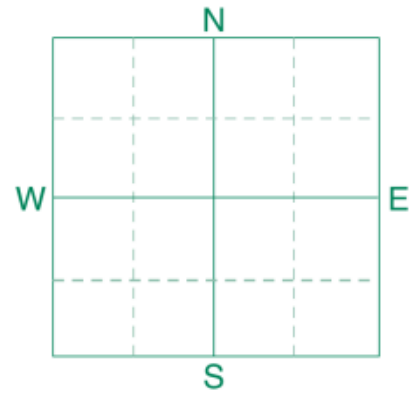
**Crop 1:** \* Caution: Seed Placed Fertilizer Can Cause Injury \* Many crops may respond to a starter application of P & K even on high soil tests. Crop Removal: P2O5 = 45 K2O = 23 AGVISE Band guidelines will build P & K test levels to the medium range over many years.  
**Crop 2:** \* Caution: Seed 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 = 64 K2O = 43 AGVISE Band guidelines will build P & K test levels to the medium range over many years.



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 Northwood: (701) 587-6010  
 Benson: (320) 843-4109

### SOIL TEST REPORT

FIELD ID **NANW13110**  
 SAMPLE ID  
 FIELD NAME  
 COUNTY  
 TWP **1** RANGE **18 W**  
 SECTION **13** QTR **NW** ACRES **110**  
 PREV. CROP



**SUBMITTED FOR:**  
**Napa**

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

REF # **2142890** BOX # **0**  
 LAB # **NW197970**

Date Sampled \_\_\_\_\_ Date Received **11/10/2017** Date Reported **11/20/2017**

Nutrient In The Soil		Interpretation				1st Crop Choice		2nd Crop Choice		3rd Crop Choice				
		VLow	Low	Med	High									
Nitrate	0-6" 6-24"	10 lb/ac 15 lb/ac	*****				Canola-bu	Wheat-Spring		Corn-Grain				
	0-24"	25 lb/ac					YIELD GOAL	YIELD GOAL		YIELD GOAL				
							50 BU	60 BU		160 BU				
							SUGGESTED GUIDELINES	SUGGESTED GUIDELINES		SUGGESTED GUIDELINES				
							Band	Band		Band				
Phosphorus	Olsen	8 ppm	*****				LB/ACRE	APPLICATION	LB/ACRE	APPLICATION	LB/ACRE	APPLICATION		
Potassium		181 ppm	*****			N	150		N	137		N	167	
Chloride						P <sub>2</sub> O <sub>5</sub>	43	Band *	P <sub>2</sub> O <sub>5</sub>	35	Band *	P <sub>2</sub> O <sub>5</sub>	56	Band *
Sulfur	0-6" 6-24"	86 lb/ac 168 lb/ac	*****			K <sub>2</sub> O	0		K <sub>2</sub> O	10	Band (Starter)*	K <sub>2</sub> O	14	Band *
Boron						Cl			Cl			Cl		
Zinc						S	10	Band	S	0		S	0	
Iron						B			B			B		
Manganese						Zn			Zn			Zn		
Copper						Fe			Fe			Fe		
Magnesium						Mn			Mn			Mn		
Calcium						Cu			Cu			Cu		
Sodium						Mg			Mg			Mg		
Org.Matter						Lime			Lime			Lime		
Carbonate(CCE)						Soil pH		Buffer pH	Cation Exchange Capacity		% Base Saturation (Typical Range)			
Sol. Salts	0-6" 6-24"	0.44 mmho/cm 0.38 mmho/cm	*****			0-6"	7.4		% Ca	% Mg	% K	% Na	% H	
			*****			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 = 64 K2O = 43 AGVISE Band guidelines will build P & K test levels to the medium range over many years.