

Appendix D: Land Base Calculations²

1a - Pigs					
Operation Name:					
Operation Type	Storage Type	Volatilization	Animal Numbers (Places)	N Excreted Per Herd Adjusted for Storage N Loss (lb/yr/herd)	P2O5 Excreted Per Herd Per Year (lb/yr/herd)
Gilts (Purchased)	Liquid Uncovered Earthen	30%		0	0
Boars	Liquid Uncovered Earthen	30%		0	0
Weanlings/Nursery	Liquid Uncovered Earthen	30%		0	0
Growers/Finishers	Liquid Uncovered Earthen	30%	5400	132728	72933
Sows, farrow to 6.2 kg	Liquid Uncovered Earthen	30%		0	0
Sows, farrow to 28 kg	Liquid Uncovered Earthen	30%	600	35945	24855
Sows, farrow to finish	Liquid Uncovered Earthen	30%		0	0

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1e - Poultry
 Operation Name:

Species / Commodity	Type of Operation	Storage Type	Volatilization	Bird Places	Weight in kg	Weight out kg	Days on Feed	Cycles per Year	N Excreted	
									Adjusted for N Loss lb/flock/yr	P2O5 Excreted lb/flock/yr
Chickens	Light Broilers	Solid Manure Shed	20%		0.043	1.8	30	7	0	0
Chickens	Broilers	Manure Pack (No Field Storage)	20%	66000	0.043	2.275	35	7	46030	22939
Chickens	Broiler Breeder Pullets	Solid Manure Shed	20%		0.040	2.975	168	2	0	0
Chickens	Broiler Breeder Hens	Solid Manure Shed	20%		2.975	3.960	245	1	0	0
Eggs	White Layer Pullets	Solid Manure Shed	20%		0.040	1.355	133	2	0	0
Eggs	White Layer Hens	Solid Manure Shed	20%		1.355	1.875	357	1	0	0
Eggs	White Breeder Pullets	Solid Manure Shed	20%		0.040	1.240	119	2	0	0
Eggs	White Breeder Hens	Solid Manure Shed	20%		1.240	1.670	350	1	0	0
Eggs	Brown Layer Pullets	Solid Manure Shed	20%		0.040	1.630	133	2	0	0
Eggs	Brown Layer Hens	Solid Manure Shed	20%		1.630	2.025	357	1	0	0
Eggs	Brown Breeder Pullets	Solid Manure Shed	20%		0.040	1.407	119	2	0	0
Eggs	Brown Breeder Hens	Solid Manure Shed	20%		1.407	1.960	350	1	0	0
Turkey	Broiler Turkey (0-9 wks)	Solid Manure Shed	20%		0.070	4.950	63	5	0	0
Turkey	Hen Turkey (0-11 wks)	Solid Manure Shed	20%		0.070	6.650	77	4	0	0
Turkey	Heavy Hens (0-14 wks)	Manure Pack (No Field Storage)	20%	99000	0.070	9.750	98	3	242423	138264
Turkey	Toms (0-14 wks)	Solid Manure Shed	20%		0.070	13.000	98	3	0	0
Turkey	Breeding Hen Growers (0-30 wks)	Solid Manure Shed	20%		0.070	12.900	210	1	0	0
Turkey	Breeding Hens (31-End of Lay)	Solid Manure Shed	20%		12.900	12.400	252	1	0	0
Turkey	Breeding Tom Grower (0-17 wks)	Solid Manure Shed	20%		0.070	15.770	119	1	0	0
Turkey	Breeding Tom Grower (17-30 wks)	Solid Manure Shed	20%		15.770	25.000	91	1	0	0
Turkey	Breeding Tom (31-End of Lay)	Solid Manure Shed	20%		25.000	28.180	252	1	0	0

Last Revised November 26, 2019

2 - Crop Rotation										
Operation Name: Enter the operation name on the livestock tab(s)										
Crop	Removal		Uptake		Yield	Units	Acreage	Removal		Uptake
	P2O5	N	N	Units				P2O5 (lb)	N (lb)	N (lb)
Alfalfa	13.8	58	58	lb/ton				-	-	-
Barley Grain	0.42	0.97	1.39	lb/bu	83.5	bu/ac	1087	38121	88042	126163
Barley Silage	11.8	34.4	34.4	lb/ton				-	-	-
Canola	1.04	1.93	3.19	lb/bu	46.3	bu/ac	1360	65487	121528	200868
Corn Grain	0.44	0.97	1.53	lb/bu	141	bu/ac	545	33812	74540	117573
Corn Silage	12.7	31.2	31.2	lb/ton				-	-	-
Dry Edible Beans	1.39	4.17		lb/cwt				-	-	-
Fababeans	1.79	5.02	8.4	lb/cwt				-	-	-
Flax	0.65	2.13	2.88	lb/bu				-	-	-
Grass Hay	10	34.2	34.2	lb/ton				-	-	-
Lentils	1.03	3.39	5.08	lb/cwt				-	-	-
Oats	0.26	0.62	1.07	lb/bu				-	-	-
Pasture (grazed)	10	34.2	34.2	lb/ton	0.5	ton/ac		-	-	-
Peas	0.69	2.34	3.06	lb/bu				-	-	-
Potatoes	0.09	0.32	0.57	lb/cwt				-	-	-
Rye	0.45	1.06	1.67	lb/bu				-	-	-
Soybeans	0.84	3.87	5.2	lb/bu	35.6	bu/ac	1083	32386	149207	200485
Sunflower	1.1	2.8		lb/cwt				-	-	-
Wheat - Spring	0.59	1.5	2.11	lb/bu	62.3	bu/ac	1360	49990	127092	178776
Wheat - Winter	0.51	1.04	1.35	lb/bu				-	-	-
Total Acres							5435	219795	560409	823864
Estimated Average Removal/Uptake (lb/ac)								40.4	103.1	151.6
Acres in Hanover and La Broquerie										
Proportion in Hanover or La Broquerie								0%		
Additional Acres										
Crop Planned on Additional Acres										
Total Acreage								5435		
*Notes: Enter the number of acres that are in the RM's of Hanover or La Broquerie in cell H26. Additional acres include acres for which crop removal or soil data is limited or unavailable.										

Last revised December 18, 2017

3 - Farm Excretion			
Operation Name:		Enter the operation name on the livestock tab(s)	
Species	Animal Category/Operation type	N (lb/year)	P2O5 (lb/year)
Pigs	Boars	0	0
	Weanlings/Nursery	0	0
	Growers/Finishers	132728	72933
	Sows, farrow to 5 kg	0	0
	Sows, farrow to 23 kg	35945	24855
	Sows, farrow to finish	0	0
Beef	Mature Cows and Bred Heifers, plus associated livestock	0	0
	Feedlot Cattle - long keep	0	0
	Feedlot Cattle - short keep	0	0
	Backgrounders - pasture	0	0
	Backgrounders - confined	0	0
Dairy	Lactating cow	0	0
	Lactating First Calf Heifer	0	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
Sheep	Ewes	0	0
	Replacement Ewes	0	0
	Rams	0	0
	Lambs	0	0
	Ewes, plus assoc livestock	0	0
	Feeder	0	0
Chickens	Light Broilers	0	0
	Broilers	46030	22939
	Broiler Breeder Pullets	0	0
	Broiler Breeder Hens	0	0
Layers	White Layer Pullets	0	0
	White Layer Hens	0	0
	White Breeder Pullets	0	0
	White Breeder Hens	0	0
	Brown Layer Pullets	0	0
	Brown Layer Hens	0	0
	Brown Breeder Pullets	0	0
	Brown Breeder Hens	0	0
Turkeys	Broiler Turkey (0-9 wks)	0	0
	Hen Turkey (0-11 wks)	0	0
	Heavy Hens (0-14 wks)	242423	138264
	Toms (0-14 wks)	0	0
	Breeding Hen Growers (0-30 wks)	0	0
	Breeding Hens (31-End of Lay)	0	0
	Breeding Tom Grower (0-17 wks)	0	0
	Breeding Tom Grower (17-30 wks)	0	0
	Breeding Tom (31-End of Lay)	0	0
Total		457126	258991
Note: Be sure all livestock species on your farm are represented in this table, not just the livestock in the proposed expansion.			

Last revised November 26, 2019

4 - Land Base Summary	
Operation Name:	Enter the operation name on the livestock tab(s)
Nutrients Excreted	lbs
Nitrogen	457126
Phosphorus (P2O5)	258991
Crop Nutrient Use	lb/ac
Average Crop N Uptake	151.6
Average Crop Phosphorus (P2O5) Removal	40.4
Operation-specific Phosphorus (P2O5) Allowance	80.9
Land Available	5435
Land Base Required	acres
Acres for Nitrogen	3016
Acres for Phosphorus (P2O5)	3202
Phosphorus Balance	acres
Acres for Phosphorus Balance (1X)	6404
<p>Note: For lands located in Hanover and/or La Broquerie, the acres required for phosphorus are based on phosphorus balance (1X). For other lands, the acres required for phosphorus are based on twice crop phosphorus removal (2X). Land requirements for operations with lands inside and outside Hanover and/or La Broquerie are based on a weighted average.</p>	

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