

4 - Land Base Summary**Operation Name:** James Valley Colony

| Nutrients Excreted | | lbs |
|--|--|--------------|
| Nitrogen | | 236925 |
| Phosphorus (P2O5) | | 140149 |
| Crop Nutrient Use | | lb/ac |
| Average Crop N Uptake | | 153.8 |
| Average Crop Phosphorus (P2O5) Removal | | 44.0 |
| Operation-specific Phosphorus (P2O5) Allowance | | 87.9 |
| Land Available | | |
| | | 7304 |
| Land Base Required | | acres |
| Acres for Nitrogen | | 1540 |
| Acres for Phosphorus (P2O5) | | 1594 |
| Phosphorus Balance | | acres |
| Acres for Phosphorus Balance (1X) | | 3188 |

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.

Last revised November 26, 2019

3 - Farm Excretion

Operation Name: **James Valley Colony**

| Species | Animal Category/Operation type | N (lb/year) | P2O5 (lb/year) |
|-----------------|---|----------------|-------------------|
| Pigs | Boars | 0 | 0 |
| | Weanlings/Nursery | 0 | 0 |
| | Growers/Finishers | 0 | 0 |
| | Sows, farrow to 5 kg | 0 | 0 |
| | Sows, farrow to 23 kg | 0 | 0 |
| | Sows, farrow to finish | 176494 | 102516 |
| Beef | Mature Cows and Bred Heifers, plus associated livestock | 0 | 0 |
| | Feedlot Cattle - long keep | 3254 | 1810 |
| | 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 | 3119 | 1542 |
| 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 | 30687 | 15293 |
| | Broiler Breeder Pullets | 0 | 0 |
| | Broiler Breeder Hens | 0 | 0 |
| Layers | White Layer Pullets | 3262 | 2355 |
| | White Layer Hens | 20109 | 16633 |
| | 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) | 0 | 0 |
| | 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 | | 236925 | 140149 |

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

2 - Crop Rotation

Operation Name:

James Valley Colony

| 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 | 44.5 | bu/ac | 3114 | 144116 | 267446 | 442048 |
| Corn Grain | 0.44 | 0.97 | 1.53 | lb/bu | 119.9 | bu/ac | 2013 | 106198 | 234118 | 369279 |
| 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 | 1.756 | tons/ac | 220 | 3863 | 13212 | 13212 |
| 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 | 35 | bu/ac | 776 | 22814 | 105109 | 141232 |
| Sunflower | 1.1 | 2.8 | | lb/cwt | | cwt/ac | | - | - | - |
| Wheat - Spring | 0.59 | 1.5 | 2.11 | lb/bu | 63.3 | bu/ac | 1181 | 44107 | 112136 | 157738 |
| Wheat - Winter | 0.51 | 1.04 | 1.35 | lb/bu | | bu/ac | | - | - | - |
| Total Acres | | | | | | | 7304 | 321098 | 732021 | 1123509 |
| Estimated Average Removal/Uptake (lb/ac) | | | | | | | | 44.0 | 100.2 | 153.8 |
| Acres in Hanover and La Broquerie | | | | | | | | | | |
| Proportion in Hanover or La Broquerie | | | | | | | 0% | | | |
| Additional Acres | | | | | | | | | | |
| Crop Planned on Additional Acres | | | | | | | | | | |
| Total Acreage | | | | | | | 7304 | | | |

***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.

1e - Poultry

Operation Name: **James Valley Colony**

| 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 | Solid Manure Shed | 20% | 44000 | 0.043 | 2.275 | 35 | 7 | 30687 | 15293 |
| 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 | 3.950 | 245 | 1 | 0 | 0 |
| Eggs | White Layer Pullets | Solid Manure Shed | 20% | 9500 | 0.040 | 1.355 | 133 | 2 | 3262 | 2355 |
| Eggs | White Layer Hens | Solid Manure Shed | 20% | 19000 | 1.355 | 1.875 | 357 | 1 | 20109 | 16633 |
| 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 | 1.950 | 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) | Solid Manure Shed | 20% | | 0.070 | 9.750 | 98 | 3 | 0 | 0 |
| 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

1c - Dairy

Operation Name:

| Type | Storage Type | Volatilization | Animal Numbers | N Excreted Per Herd Adjusted for Storage N Loss (lb N/yr/herd) | P2O5 Excreted Per Herd Per Year (lb P2O5/year) |
|--|--------------------------|----------------|----------------|--|--|
| Mature Cows, plus associated livestock | Liquid Uncovered Earthen | 30% | 10 | 3119.3 | 1542.0 |

Last Revised October 18, 2019

1b - Beef

Operation Name: James Valley Colony

| Operation Type | Animal Category | Storage Type | Volatilization | Animal Numbers | Weight In (lb) | Weight Out (lb) | Days per Cycle (Days) | Cycles per Year | Rate of Gain (lb/day) | Days Place is Occupied per Year (days) | N Excreted Per Herd Adjusted for Storage N Loss (lb N/yr/herd) | P205 Excreted Per Herd Per Year (lb P205/year) |
|----------------|---|---------------|----------------|----------------|----------------|-----------------|-----------------------|-----------------|-----------------------|--|--|--|
| Cow Calf | Mature Cows and Bred Heifers, plus associated livestock | Field Storage | 40% | | n/a | n/a | n/a | n/a | n/a | n/a | 0 | 0 |
| Feeder | Feedlot Cattle - long keep | Field Storage | 40% | 75 | 581 | 1300 | 240 | 1.0 | 3.00 | 240 | 3254 | 1810 |
| Feeder | Feedlot Cattle - short keep | Field Storage | 40% | | 975 | 1300 | 116 | 1.0 | 2.80 | 116 | 0 | 0 |
| Feeder | Backgrounders - pasture | Field Storage | 40% | | 793 | 975 | 105 | 1.0 | 1.73 | 105 | 0 | 0 |
| Feeder | Backgrounders - confined | Field Storage | 40% | | 500 | 793 | 180 | 1.0 | 1.63 | 180 | 0 | 0 |

Last Revised January 21, 2015

1a - Pigs

Operation Name: James Valley Colony

| 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% | | 0 | 0 |
| Sows, farrow to 6.2 kg | Liquid Uncovered Earthen | 30% | | 0 | 0 |
| Sows, farrow to 28 kg | Liquid Uncovered Earthen | 30% | | 0 | 0 |
| Sows, farrow to finish | Liquid Uncovered Earthen | 30% | 650 | 176494 | 102516 |

Last Revised February 12, 2020