

**SOLIDS WORKSHEET 3 - APPLICATION RATES AND LAND REQUIREMENTS <sup>1</sup>**

| Tract No. |       |                            |  |                                    |   |   |                         |  |  |                |
|-----------|-------|----------------------------|--|------------------------------------|---|---|-------------------------|--|--|----------------|
| Field No. | Acres | Soil Test Phosphorus (STP) | Crop Rotation / Sequence                 | Planned Application Date or Timing | Planned Application Rate <sup>2</sup> (tons/ac) | Solid or Commercial Fertilizer (S or C) | Actual Application Date | Actual Application Rate <sup>2</sup> (tons/ac) | Weather at Time of Application <sup>3</sup> (Cloudy, Raining, Sunny) |                |
|           |       |                            |  |                                    |   |   |                         |  | 24 Hours Before  | 24 Hours After |
| Grass     | 3     | 55                         | Switchgrass (Ton)                        | Spring 2018                        | 1   |   |                         |  |  |                |
| Chuck 3   | 4     | 209                        | Other Cool Season Grass/Treater Hay/Tall | Spring 2018                        | 1   |   |                         |  |  |                |
| Chuck2    | 3     | 23                         | Other Cool Season Grass/Treater Hay/Tall | Spring 2018                        | 2   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0  |                                    | 0   |   |                         |  |  |                |
|           |       |                            |  |                                    |   |   |                         |  |  |                |
|           |       |                            |  |                                    |   |   |                         |  |  |                |
|           |       |                            |  |                                    |   |   |                         |  |  |                |
|           |       |                            |  |                                    |   |   |                         |  |  |                |

1. Where land application is occurring under long term lease or agreement with adjacent landowner, fields must be included in the above table.  
 2. Fields that have a "High" soil test phosphorus (>400) should implement Best Management Practices (BMPs) to reduce the risk of nutrient movement to sensitive waterbodies. BMPs may include, but not be limited to: installing conservation buffers, reducing P2O5 application rate, incorporating manure, adding chemical treatments to litter that tie up soluble P and keep it from moving over the landscape, and/or adjusting application timing.  
 3. It illegal to make land applications when the ground is frozen. It is recommended that land applications are not made within 48 hours of forecasted precipitation.

From 2018-2020 the same amount of manure went to the same fields, you still need to print out worksheet 3 for the three years. We did not apply manure to the alfalfa field because usually farmers will not allow solid manure after the first year. They may not allow solid manure at all on any of their hay fields. This would be a conversion between you and the farmer.

For this farm they need to apply to manure where all the nutrients in the manure can be utilized such as a corn field with low soil test P levels or a cool season hay. Anytime you apply manure to a hay field you may have to use a method of weed control. Hay field can better utilize the manure during the spring because new growth is coming on, but weed pressure can also be an issue.

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| Field No. | Acres | Soil Test Phosphorus (STP) | Crop Rotation / Sequence                | Planned Application Date or Timing | Planned Application Rate <sup>2</sup> (tons/ac) | Solid or Commercial Fertilizer (S or C) | Actual Application Date | Actual Application Rate <sup>2</sup> (tons/ac) | Weather at Time of Application <sup>3</sup> (Cloudy, Raining, Sunny) |                |
|           |       |                            |   |                                    |   |   |                         |  | 24 Hours Before  | 24 Hours After |
|           |       |                            |   |                                    |   |   |                         |  | Grass  | 3              |
| Chuck 3   | 4     | 209                        | Other CoolSeason Grass/Treater Hay/Feed | Spring 2019                        | 1   |   |                         |  |  |                |
| Chuck2    | 3     | 23                         | Other CoolSeason Grass/Treater Hay/Feed | Spring 2019                        | 2   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0                                       |                                    | 0   |   |                         |  |  |                |
|           |       |                            |   |                                    |   |   |                         |  |  |                |
|           |       |                            |   |                                    |   |   |                         |  |  |                |
|           |       |                            |   |                                    |   |   |                         |  |  |                |

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|-----------|-------|----------------------------|---|------------------------------------|---|---|-------------------------|--|--|----------------|
| Field No. | Acres | Soil Test Phosphorus (STP) | Crop Rotation / Sequence                  | Planned Application Date or Timing | Planned Application Rate <sup>2</sup> (tons/ac) | Solid or Commercial Fertilizer (S or C) | Actual Application Date | Actual Application Rate <sup>2</sup> (tons/ac) | Weather at Time of Application <sup>3</sup> (Cloudy, Raining, Sunny) |                |
|           |       |                            |   |                                    |   |   |                         |  | 24 Hours Before  | 24 Hours After |
|           |       |                            |   |                                    |   |   |                         |  | Grass  | 3              |
| Chuck 3   | 4     | 209                        | Other Cool Season Grass/Treater Mix (Ton) | Spring 2020                        | 1   |   |                         |  |  |                |
| Chuck2    | 3     | 23                         | Other Cool Season Grass/Treater Mix (Ton) | Spring 2020                        | 2   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
| 0         | 0     | 0                          | 0   |                                    | 0   |   |                         |  |  |                |
|           |       |                            |   |                                    |   |   |                         |  |  |                |
|           |       |                            |   |                                    |   |   |                         |  |  |                |
|           |       |                            |   |                                    |   |   |                         |  |  |                |

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**SOLIDS WORKSHEET 2 - NUTRIENT BALANCE**

|       |           |       |
|-------|-----------|-------|
| Tract | Field No. | Acres |
|       | Grass     | 3     |

Soil Test P Value (Mehlich 3)

|   |  |                                   |                       |
|---|--|-----------------------------------|-----------------------|
| 1. Crop or Crop Sequence/Rotation   | <input type="text" value="Switchgrass (Ton)"/> |                                   |                       |
| 2. Realistic Yield (Average from 5-10 Years on a per acre basis)  | <input type="text" value="3.0"/>               |                                   |                       |
| 3. Plant Nutrients Needed or Allowed (lbs/ac)   | <b>N</b>                                       | <b>P<sub>2</sub>O<sub>5</sub></b> | <b>K<sub>2</sub>O</b> |
|   | 66   | 36                                | 174                   |
| 4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold   | <input type="text" value="0"/>                 |                                   |                       |
| 5. Fertilizer Credits (lbs/ac)  | <input type="text"/>                           |                                   |                       |
| 6. Plant Nutrients Needed Minus Credits (lbs/ac)  | 66   | 36                                | 174                   |
| 7. Nutrients in Manure (lbs/ton)<br>Enter lab results in box on right to override Worksheet 1 values  | 33.0   | 34.0                              | 43.0                  |
| 8. Percent Nutrients Retained in System <input type="text" value="Table 1"/>  | 80%  | 95%                               | 95%                   |
| Enter Table 1 values or Enter zero if lab results are used in Step 7  |  |                                   |                       |
| 9. Net Retained Nutrients in Manure (lbs./ton)  | 33.0   | 34.0                              | 43.0                  |
| 10. Percent of Available Nutrients <input type="text" value="Table 2"/>   | 60%  | 80%                               | 100%                  |
| Enter Table 2 value for N   |  |                                   |                       |
| 11. Net Available Nutrients (lbs./ton)  | 19.8   | 27.2                              | 43.0                  |
| 12. Application Rate (tons/ac)<br>Application limitations may apply.<br>Enter Chosen Application Rate in box on right                           | 1  | 1                                 | 1                     |
| 13. Net Application Amount for All Nutrients (lbs/ac)   | 20   | 27                                | 43                    |
| 14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)  | -46  | -9                                | -131                  |
| Tons Available <input type="text" value="14"/> - Tons Applied in Field <input type="text" value="3"/> = Balance <input type="text" value="11"/> |  |                                   |                       |

| Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7 |      |     |
|--|------|-----|
| N  | P205 | K20 |
| 33   | 34   | 43  |

| Chosen Application Rate<br>MUST ENTER |
|---------------------------------------|
| 1                                     |

## SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

|       |           |       |
|-------|-----------|-------|
| Tract | Field No. | Acres |
|       | Chuck 3   | 4     |

Soil Test P Value (Mehlich 3)

If applying to a legume, apply based on phosphorus. (Unless STP exceeds 600)

|   |  |                               |                              |
|---|--|-------------------------------|------------------------------|
| 1. Crop or Crop Sequence/Rotation   | Other Cool Season Grass/Legume Hay (Ton) |                               |                              |
| 2. Realistic Yield (Average from 5-10 Years on a per acre basis)  | 3.0                                      |                               |                              |
| 3. Plant Nutrients Needed or Allowed (lbs/ac)   | N  | P <sub>2</sub> O <sub>5</sub> | K <sub>2</sub> O             |
|   | 105                                      | 36                            | 159                          |
| 4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold                                     | 0  |                               |                              |
| 5. Fertilizer Credits (lbs/ac)  |  |                               |                              |
| 6. Plant Nutrients Needed Minus Credits (lbs/ac)  | 105                                      | 36                            | 159                          |
| 7. Nutrients in Manure (lbs/ton)<br>Enter lab results in box on right to override Worksheet 1 values                  | 33.0                                     | 34.0                          | 43.0                         |
| 8. Percent Nutrients Retained in System<br>First Worksheet 2 values are used or zero if lab results are used          | 0%                                       | 0%                            | 0%                           |
| 9. Net Retained Nutrients in Manure (lbs./ton)  | 33.0                                     | 34.0                          | 43.0                         |
| 10. Percent of Available Nutrients<br>Enter Table 2 value for N   | 60%                                      | 80%                           | 100%                         |
| 11. Net Available Nutrients (lbs./ton)  | 19.8                                     | 27.2                          | 43.0                         |
| 12. Application Rate (tons/ac)<br>Application limitations may apply.<br>Enter Chosen Application Rate in box on right | 1  | 1                             | 1                            |
| 13. Net Application Amount for All Nutrients (lbs/ac)   | 20                                       | 27                            | 43                           |
| 14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)  | -85                                      | -9                            | -116                         |
| <b>Tons Available</b>   | <b>11</b>                                | <b>-</b>                      | <b>Tons Applied in Field</b> |
|   |  |                               | <b>4</b>                     |
|   |  | <b>= Balance</b>              | <b>7</b>                     |

Table 2

| Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7 |      |     |
|--|------|-----|
| N  | P205 | K20 |
| 33   | 34   | 43  |

Chosen Application Rate  
**MUST ENTER**  
1

Go to Worksheet 2 Solids

## SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

| Tract | Field No. | Acres |
|-------|-----------|-------|
|       | Chuck2    | 3     |

Soil Test P Value (Mehlich 3)

If applying to a legume, apply based on phosphorus. (Unless STP exceeds 600)

|   |   |                                   |                       |
|---|---|-----------------------------------|-----------------------|
| 1. Crop or Crop Sequence/Rotation   | <input type="text" value="Other Cool Season Grass/Legume Hay (Ton)"/> |                                   |                       |
| 2. Realistic Yield (Average from 5-10 Years on a per acre basis)  | <input type="text" value="3.0"/>                                      |                                   |                       |
| 3. Plant Nutrients Needed or Allowed (lbs/ac)   | <b>N</b>  | <b>P<sub>2</sub>O<sub>5</sub></b> | <b>K<sub>2</sub>O</b> |
|   | 105   | 36                                | 159                   |
| 4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold   | <input type="text" value="0"/>  |                                   |                       |
| 5. Fertilizer Credits (lbs/ac)  | <input type="text"/>  |                                   |                       |
| 6. Plant Nutrients Needed Minus Credits (lbs/ac)  | 105   | 36                                | 159                   |
| 7. Nutrients in Manure (lbs/ton)<br><small>Enter lab results in box on right to override Worksheet 1 values</small>   | 33.0  | 34.0                              | 43.0                  |
| 8. Percent Nutrients Retained in System<br><small>First Worksheet 2 values are used or zero if lab results are used</small>   | 0%  | 0%                                | 0%                    |
| 9. Net Retained Nutrients in Manure (lbs./ton)  | 33.0  | 34.0                              | 43.0                  |
| 10. Percent of Available Nutrients<br><small>Enter Table 2 value for N</small>  | 60%   | 80%                               | 100%                  |
|   | <input type="text" value="Table 2"/>                                  |                                   |                       |
| 11. Net Available Nutrients (lbs./ton)  | 19.8  | 27.2                              | 43.0                  |
| 12. Application Rate (tons/ac)<br><small>Application limitations may apply.<br/>Enter Chosen Application Rate in box on right</small>   | 2   | 2                                 | 2                     |
| 13. Net Application Amount for All Nutrients (lbs/ac)   | 40  | 54                                | 86                    |
| 14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)  | -65   | 18                                | -73                   |
| <p><b>Tons Available</b>    <input type="text" value="7"/>    -    <b>Tons Applied in Field</b>    <input type="text" value="6"/>    = <b>Balance</b>    <input type="text" value="1"/></p> |   |                                   |                       |

| Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7 |      |     |
|--|------|-----|
| N  | P205 | K20 |
| 33   | 34   | 43  |

|                                       |
|---------------------------------------|
| Chosen Application Rate<br>MUST ENTER |
| 2                                     |

Go to Worksheet 3 Solids

We applied more manure to this field because it could utilize the P & K according to the soil test P.