### SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

<table>
<thead>
<tr>
<th>Tract</th>
<th>Field No.</th>
<th>Acres</th>
<th>Soil Test P Value (Mehlich 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6</td>
<td>11</td>
<td></td>
<td>79</td>
</tr>
</tbody>
</table>

1. Crop or Crop Sequence/Rotation

2. Realistic Yield (Average from 5-10 Years on an acre basis) | 20.0 |

3. Plant Nutrients Needed or Allowed (Ib/acre) | N 184, P<sub>2</sub>O<sub>5</sub> 72, K<sub>2</sub>O 150 |

4. Adjusted P<sub>2</sub>O<sub>5</sub> Application Rate According to Threshold |

5. Fertilizer Credits (Ib/acre) |

6. Plant Nutrients Needed Minus Credits (Ib/acre) | N 184, P<sub>2</sub>O<sub>5</sub> 72, K<sub>2</sub>O 150 |

7. Nutrients in Manure (Ib/ton) | N 10.6, P<sub>2</sub>O<sub>5</sub> 4.9, K<sub>2</sub>O 8.1 |

8. Percent Nutrients Retained in System (Table 1) | 80% N, 95% P<sub>2</sub>O<sub>5</sub>, 95% K<sub>2</sub>O |

9. Net Retained Nutrients in Manure (Ib/ton) |

10. Percent of Available Nutrients (Table 2) | N 36%, P<sub>2</sub>O<sub>5</sub> 80%, K<sub>2</sub>O 80% |

11. Net Available Nutrients (Ib/ton) | 3.0, 3.7, 7.7 |

12. Application Rate (Ib/acre) |

13. Net Application Amount for All Nutrients (Ib/acre) |

14. Nutrient Needs (-1) or Surpluses (+1) (Ib/acre) | -173, -46, -106 |

Tone Available | 269 | - | Tone Applied in Field | 177 | - | Balance | 192 |
# SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

<table>
<thead>
<tr>
<th>Tract</th>
<th>Field No.</th>
<th>Acres</th>
<th>Soil Test P Value (Mehlich 3)</th>
<th>N</th>
<th>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</th>
<th>K&lt;sub&gt;2&lt;/sub&gt;O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>H7</td>
<td>32</td>
<td></td>
<td></td>
<td>194</td>
<td>72</td>
</tr>
</tbody>
</table>

1. Crop or Crop Sequence/Rotation
   - Corn Silage (Ton)

2. Realistic Yield (Average from 5-10 Years on a per acre basis)
   - 20.0

3. Plant Nutrients Needed or Allowed (lb/acre)
   - N: 194, P<sub>2</sub>O<sub>5</sub>: 72, K<sub>2</sub>O: 160

4. Adjusted P<sub>2</sub>O<sub>5</sub> Application Rate According to Threshold
   - 72

5. Fertilizer Credits (lb/acre)

6. Plant Nutrients Needed Minus Credits (lb/acre)
   - 194, 72, 160

7. Nutrients in Manure (lb/ton)
   - N: 11.6, P<sub>2</sub>O<sub>5</sub>: 43, K<sub>2</sub>O: 81
   - Enter lab results in box on right to override Worksheet 1 values

8. Percent Nutrients Retained in System
   - N: 80%, P<sub>2</sub>O<sub>5</sub>: 95%, K<sub>2</sub>O: 95%
   - First Worksheet 2 values are used or zero if lab results are used

9. Net Retained Nutrients in Manure (lb/ton)
   - N: 8.5, P<sub>2</sub>O<sub>5</sub>: 4.7, K<sub>2</sub>O: 7.7

10. Percent of Available Nutrients
    - N: 35%, P<sub>2</sub>O<sub>5</sub>: 90%, K<sub>2</sub>O: 100%
    - Enter Table 2 value for N

11. Net Available Nutrients (lb/ton)
    - 3.0, 3.7, 7.7

12. Application Rate (ton/acre)
    - Do not exceed phosphorus application rate. Implement a phosphorus drawdown plan.
    - Table 2 includes different application rates.

13. Net Application Amount for All Nutrients (lb/acre)
    - N: 12, P<sub>2</sub>O<sub>5</sub>: 15, K<sub>2</sub>O: 31

14. Nutrient Needs [-] or Surpluses [+] (lb/acre)
    - N: -182, P<sub>2</sub>O<sub>5</sub>: -57, K<sub>2</sub>O: -129

Tons Available: 192 - Tons Applied in Field: 128 - Balance: 64

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*401-600 CTP: Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.
*501-800 CTP: Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.
*> 800 CTP: Phosphorus applications are no longer allowed (manure may not be land applied in accordance with this guidance.)

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 1

<table>
<thead>
<tr>
<th>N</th>
<th>P&lt;sub&gt;2&lt;/sub&gt;O&lt;sub&gt;5&lt;/sub&gt;</th>
<th>K&lt;sub&gt;2&lt;/sub&gt;O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Enter Chosen Application Rate MUST ENTER

Go to Worksheet 3, Solids.
### SOLIDS WORKSHEET 2 - NUTRIENT BALANCE

<table>
<thead>
<tr>
<th>Tract</th>
<th>Field No.</th>
<th>Acres</th>
<th>Soil Test P Value (Mehlich 3)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>126</td>
</tr>
</tbody>
</table>

1. Crop or Crop Sequence/Rotation
2. Realistic Yield (Average from 5-10 Years on a per acre basis)
3. Plant Nutrients Needed or Allowed (lb/acre)
4. Adjusted P₂O₅ Application Rate According to Threshold
5. Fertilizer Credits (lb/acre)
6. Plant Nutrients Needed Minus Credits (lb/acre)
7. Nutrients in Manure (lb/ton)
   - Enter lab results in box on right to override Worksheet 1 values
8. Percent Nutrients Retained in System
   - First Worksheet 2 values are used or zero if lab results are used
9. Net Retained Nutrients in Manure (lb/ton)
10. Percent of Available Nutrients
    - Enter Table 2 value for N
11. Net Available Nutrients (lb/ton)
12. Application Rate (ton/acre)
   - Application limitations may apply.
   - Enter Chosen Application Rate in box on right
13. Net Application Amount for All Nutrients (lb/acre)
14. Nutrient Needs (-) or Surpluses (+) (lb/acre)

<table>
<thead>
<tr>
<th>Tons Available</th>
<th>Tons Applied in Field</th>
<th>Balance</th>
</tr>
</thead>
<tbody>
<tr>
<td>64</td>
<td>56</td>
<td>8</td>
</tr>
</tbody>
</table>

Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7

<table>
<thead>
<tr>
<th>N</th>
<th>P₂O₅</th>
<th>K₂O</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

Step 7

Chosen Application Rate
MUST ENTER

7

Go to Worksheet 3 Solids
When making a NMP you must ask the farmer if they own their own manure spreader. The maximum for a one time application of solid manure to 10 tons to the acre. If they own a manure spreader, are they willing to go back for a second application? In many cases the producer may be too busy. The reason I put 7 T/ac for fields H6 & H10 was because the P level was much lower than field H6. In this case all three fields has P soil test levels above 45 lbs./ac, so we are not effectively utilizing the Phosphorus in the manure. It would be suggested to put on a field with a P soil test level below 45 lbs./ac, if possible and if the farmer is willing.

<table>
<thead>
<tr>
<th>Field No.</th>
<th>Acres</th>
<th>Soil Test Phosphorus (STP)</th>
<th>Crop Rotation / Sequence</th>
<th>Planned Application Date or Timing</th>
<th>Planned Application Rate</th>
<th>Solid or Commercial Fertilizer (S or C)</th>
<th>Actual Application Date</th>
<th>Actual Application Rate</th>
<th>Weather at Time of Application</th>
<th>24 Hours Before</th>
<th>24 Hours After</th>
</tr>
</thead>
<tbody>
<tr>
<td>H6</td>
<td>31</td>
<td>79</td>
<td>Corn Silage (Ton)</td>
<td>Spring 2017</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H7</td>
<td>32</td>
<td>450</td>
<td>Corn Silage (Ton)</td>
<td>Spring 2017</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H10</td>
<td>8</td>
<td>126</td>
<td>Corn Silage (Ton)</td>
<td>Spring 2017</td>
<td>7</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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 P2OS 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.
Soybeans are not the best utilization of manure because it is a legume. If the farmer requests applying to the soybeans and will not compromise, then we can still apply to these fields because the soil test P levels are below 800 lbs./ac. At this point you would be inefficiently using nutrients/money.

<table>
<thead>
<tr>
<th>Tract</th>
<th>Field No.</th>
<th>Acres</th>
<th>Soil Test P Value (Mullich 3)</th>
<th>120</th>
</tr>
</thead>
</table>

1. Crop or Crop Sequence/Rotation
   - Soybean Grain (Bushel) (Legume)

2. Realistic Yield (Average from 5-10 Years on a per acre basis)
   - N  50  P2O5  70

3. Plant Nutrients Needed or Allowed (Ib/acre)
   - N  20  P2O5  50  K2O

4. Adjusted P2O5 Application Rate According to Threshold
   - 0

5. Fertilizer Credits (Ib/acre)

6. Plant Nutrients Needed Minus Credits (Ib/acre)
   - 20  50  50

7. Nutrients in Manure (Ib/1000 gallons)
   - Enter lab results in box on right to override Worksheet 1 values
   - N  10  P2O5  20

8. Percent Nutrients Retained in System (Table 1)
   - Enter Table 2 values or Enter zero if lab results are used in Step 7
   - Table 1: N  35%  P2O5  60%  K2O  65%

9. Net Retained Nutrients in Manure (Ib/1000 gallons)
   - 20  10  20

10. Percent of Available Nutrients
    - Enter Table 2 value for N
    - Table 2: N  45%  P2O5  100%  K2O

11. Net Available Nutrients (Ib/1000 gallons)
    - 0  0  0

12. Application Rate (1000 gallons/acre)
    - Application limitations may apply
    - Enter Chosen Application Rate in box on right
    - 2  2  2

13. Net Application Amount for All Nutrients (Ib/acre)
    - 2  2  4

14. Nutrient Needs [-] or Surpluses [+] (Ib/acre)
    - -226  -48  -72

Gallons Available  356,664  -  Gallons Applied in Field  64,000  =  Balance  292,664

If applying to a legume, apply based on phosphorus, unless STP exceeds 800.

Go to Worksheet 3 Liquids
This field could use phosphorus because the soil test levels show P levels below 45 lbs./ac. If there is a crop rotation in, then the soybean/legume can utilize some N to get the plant started.
The fertilizer credit (step 5) is used because we applied solid & liquid manure as the farmer requested. The numbers come from solid worksheet 2, step 13.
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The fertilizer credit (step 5) is used because we applied solid & liquid manure as the farmer requested. The numbers come from solid worksheet 2, step 13.
When spreading manure, legumes are usually not the best place to apply because they can create their own Nitrogen. In some cases, such as a crop rotation, applying manure in a small amount can help the legume get started.