

**LIQUIDS 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> (1,000 gal/ac)	Liquid or Commercial Fertilizer (L or C)	Actual Application Date	Actual Application Rate <sup>2</sup> (1,000 gal/ac)	Weather at Time of Application <sup>3</sup> (Cloudy, Raining, Sunny)	
									24 Hours Before	24 Hours After
k	20	644	Corn Silage (Ton)	Spring 2019	45					
H	18	538	Alfalfa Hay (Ton) (legume)	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					
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 is 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.

I applied the maximum amount of manure based on Phosphorus needs of the plant for the corn silage, then applied the rest to the alfalfa field. The alfalfa will take up the nutrients that were put down but it is not needed. The rest of the P needed for the plant will come from the soil as a draw down.

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
		20

Soil Test P Value (Mehlich 3) **644**

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 (lbs/ac)	<b>N</b>	<b>P<sub>2</sub>O<sub>5</sub></b>	<b>K<sub>2</sub>O</b>
	194	72	160
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	36		
5. Fertilizer Credits (lbs/ac)			
6. Plant Nutrients Needed Minus Credits (lbs/ac)	194	36	160
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	1.0	1.0	4.0
8. Percent Nutrients Retained in System <b>Table 1</b> Enter Table 1 values or Enter zero if lab results are used in Step 7	35%	50%	65%
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	4.0
10. Percent of Available Nutrients <b>Table 2</b> Enter Table 2 value for N	75%	80%	100%
11. Net Available Nutrients (lbs/1,000 gallons)	0.8	0.8	4.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	45	45	45
13. Net Application Amount for All Nutrients (lbs/ac)	34	36	180
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-160	0	20
<b>Gallons Available</b> 939,562 - <b>Gallons Applied in Field</b> 900,000 = <b>Balance</b> 39,562			

• 401-600 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.

• 601-800 STP - Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.

• > 800 STP - 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 7		
N	P205	K20
1	1	4

Chosen Application Rate <b>MUST ENTER</b>
45
One time application rate should not exceed ~13,500 gallons per acre (or 1/2 inch per acre)

This field will need split applications.

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H	18

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="Alfalfa Hay (Ton) (legume)"/>		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	<input type="text" value="8.0"/>		
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>
	408	112	440
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	<input type="text" value="112"/>	<input type="text" value="112"/>	<input type="text" value="440"/>
5. Fertilizer Credits (lbs/ac)	<input type="text"/>	<input type="text"/>	<input type="text"/>
6. Plant Nutrients Needed Minus Credits (lbs/ac)	408	112	440
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	<input type="text" value="1.0"/>	<input type="text" value="1.0"/>	<input type="text" value="1.2"/>
8. Percent Nutrients Retained in System First Worksheet 2 values used or zero if lab results are used	<input type="text" value="0%"/>	<input type="text" value="0%"/>	<input type="text" value="65%"/>
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	0.8
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	<input type="text" value="80%"/>	<input type="text" value="80%"/>	<input type="text" value="100%"/>
11. Net Available Nutrients (lbs/1,000 gallons)	0.8	0.8	0.8
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="2"/>
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	2	2	2
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-406	-110	-438

• 401-600 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.  
 • 601-800 STP - Phosphorus applications at rates not to exceed 1/2 of the estimated removal of phosphorus in the harvested plant biomass.  
 • > 800 STP - Phosphorus applications are no longer allowed (manure may not be land applied in accordance with this guidance).

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N	P205	K20
<input type="text" value="1"/>	<input type="text" value="1"/>	<input type="text" value="4"/>

Chosen Application Rate MUST ENTER
<input type="text" value="2"/>

Gallons Available 39,562 - Gallons Applied in Field 36,000 = Balance 3,562

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									24 Hours Before	24 Hours After
H	18	538	Wheat Grain (Bushel)	Fall 2019	25					
A	20	553	Wheat Grain (Bushel)	Fall 2019	25					
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					
0	0	0	0		0					

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 3. It is 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.

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	H	18

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	Wheat Grain (Bushel)		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	50.0		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
	75	30	17
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	30		
5. Fertilizer Credits (lbs/ac)			
6. Plant Nutrients Needed Minus Credits (lbs/ac)	75	30	17
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	1.0	1.0	4.0
8. Percent Nutrients Retained in System <input type="text" value="Table 1"/> Enter Table 1 values or Enter zero if lab results are used in Step 7	35%	50%	65%
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	4.0
10. Percent of Available Nutrients <input type="text" value="Table 2"/> Enter Table 2 value for N	50%	80%	100%
11. Net Available Nutrients (lbs/1,000 gallons)	0.5	0.8	4.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	25	25	25
13. Net Application Amount for All Nutrients (lbs/ac)	13	20	100
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-63	-10	83

Gallons Available 939,562 - Gallons Applied in Field 450,000 = Balance 489,562

- 401-600 STP - Phosphorus applications at rates not to exceed the estimated removal of phosphorus in the harvested plant biomass.
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- > 800 STP - 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 7		
N	P205	K20
1	1	4

Chosen Application Rate MUST ENTER
25

One time application rate should not exceed ~13,500 gallons per acre (or 1/2 inch per acre)

## LIQUIDS WORKSHEET 2 - NUTRIENT BALANCE

Tract	Field No.	Acres
	A	20

Soil Test P Value (Mehlich 3)

1. Crop or Crop Sequence/Rotation	Wheat Grain (Bushel)		
2. Realistic Yield (Average from 5-10 Years on a per acre basis)	50.0		
3. Plant Nutrients Needed or Allowed (lbs/ac)	N	P <sub>2</sub> O <sub>5</sub>	K <sub>2</sub> O
	75	30	17
4. Adjusted P <sub>2</sub> O <sub>5</sub> Application Rate According to Threshold	30		
5. Fertilizer Credits (lbs/ac)			
6. Plant Nutrients Needed Minus Credits (lbs/ac)	75	30	17
7. Nutrients in Manure (lbs/1,000 gallons) Enter lab results in box on right to override Worksheet 1 values	1.0	1.0	4.0
8. Percent Nutrients Retained in System First Worksheet 2 values used or zero if lab results are used	0%	0%	0%
9. Net Retained Nutrients in Manure (lbs/1,000 gallons)	1.0	1.0	4.0
10. Percent of Available Nutrients Enter Table 2 value for N <input type="text" value="Table 2"/>	50%	80%	100%
11. Net Available Nutrients (lbs/1,000 gallons)	0.5	0.8	4.0
12. Application Rate (1,000 gallons/ac) Application limitations may apply. Enter Chosen Application Rate in box on right	25	25	25
13. Net Application Amount for All Nutrients (1,000 gallons/ac)	13	20	100
14. Nutrient Needs (-) or Surpluses (+) (lbs/ac)	-63	-10	83

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Enter Lab Results Here to Override Calculations From Worksheet 1 on Step 7		
N	P205	K20
1	1	4

Chosen Application Rate MUST ENTER
25
One time application rate should not exceed ~13,500 gallons per acre (or 1/2 inch per acre)

Gallons Available 489,562 - Gallons Applied in Field 500,000 = Balance Applied more than Available