



Ohio Environmental Protection Agency

Division of Surface Water

**Biosolids Agronomic Rate Calculation Worksheet**

General Information

Ohio EPA #	LinRd-3
Field ID #	LinRd-3 M+S
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00	mg/kg
Total Kjeldahl Nitrogen	54600.00	mg/kg
Total Phosphorus	27700.00	mg/kg
Organic Nitrogen	85.20	lbs/ton
Available Nitrogen	49.56	lbs/ton
Phosphate (P <sub>2</sub> O <sub>5</sub> )	126.87	lbs/ton
Will Immediate Incorporation / Injection be performed?	No	

Beneficial Use Site Information

Soil Phosphorus	98.00	ppm	Mehlich 3		
	86.24	ppm			
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor or the <i>Phosphorus Index</i> :					
County	Shelby				
Soil Type	Crosby silt loam, 0 to 2 percent slopes				
Hydrologic Soil Group	C				
Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Crop Nitrogen Requirements (Year 1)	200	lbs/acre			
Existing Available Nitrogen	30	lbs/acre			
Non-Biosolids Nitrogen Application	45	lbs/acre			
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	0	lbs/acre			
Non-Biosolids Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Application	0	lbs/acre			
Biosolids Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficial Use	247.26	lbs/acre			
Total Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	247.26	lbs/acre			

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perennial stream.	0
Runoff Class - Slope Range	1-3%	4
Soil Phosphorus		6.04
Application - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		0
Method - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	None applied.	0
Application - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		14.84
Method - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.	1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		30.87

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.95	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre

Phosphorus Index  
High potential for phosphorus runoff. Use the Phosphate Agronomic Rate (single or multi year).

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	62	dry tons
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficially Used Per Acre	247.35	lbs/acre
Acreage	31.8	
Date Biosolids Delivered to Beneficial Use Site	4/17/2019	
Dates of Beneficial Use	5/7/2019	to 5/7/2019
Total Days Biosolids Stored at Beneficial Use Site	20.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No

Is a permanent sign posted at the beneficial use site?



Ohio Environmental Protection Agency

Division of Surface Water

**Biosolids Agronomic Rate Calculation Worksheet**

General Information

Ohio EPA #	KIRK-1
Field ID #	KIRK-1
Generator Name	City of Sidney WWTP

Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00 mg/kg
Total Kjeldahl Nitrogen	54600.00 mg/kg
Total Phosphorus	27700.00 mg/kg
Organic Nitrogen	85.20 lbs/ton
Available Nitrogen	49.56 lbs/ton
Phosphate (P <sub>2</sub> O <sub>5</sub> )	126.87 lbs/ton
Will Immediate Incorporation / Injection be performed?	No

Beneficial Use Site Information

Soil Phosphorus	74.00 ppm	Mehlich 3			
	65.12 ppm				
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided Soil Phosphorus result, you must utilize the most limiting factor or the Phosphorus Index.					
County	Shelby				
Soil Type	Crosby silt loam, 0 to 2 percent slopes				
Hydrologic Soil Group	C				
Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Crop Nitrogen Requirements (Year 1)	200 lbs/acre				
Existing Available Nitrogen	30 lbs/acre				
Non-Biosolids Nitrogen Application	45 lbs/acre				
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	0 lbs/acre				
Non-Biosolids Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Application	0 lbs/acre				
Biosolids Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficial Use	250.81 lbs/acre				
Total Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	250.81 lbs/acre				

Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is adjacent to an intermittent or perennial stream.	4
Runoff Class - Slope Range	1-3%	4
Soil Phosphorus		4.56
Application - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		0
Method - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	None applied.	0
Application - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		15.05
Method - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.	1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		33.61

Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.98	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre

Phosphorus Index  
High potential for phosphorus runoff. Use the Phosphate Agronomic Rate (single or multi year).

Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	85	dry tons
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficially Used Per Acre	250.78	lbs/acre
Acreage	43	
Date Biosolids Delivered to Beneficial Use Site	4/17/2019	
Dates of Beneficial Use	5/1/2019	to 5/1/2019
Total Days Biosolids Stored at Beneficial Use Site	14.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No

Is a permanent sign posted at the beneficial use site?

### Biosolids Agronomic Rate Calculation Worksheet

#### General Information

Ohio EPA #	Scott-1	
Field ID #	Scott-1 M+S	
Generator Name	City of Sidney WWTP	

#### Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00	mg/kg
Total Kjeldahl Nitrogen	54600.00	mg/kg
Total Phosphorus	27700.00	mg/kg
Organic Nitrogen	85.20	lbs/ton
Available Nitrogen	49.56	lbs/ton
Phosphate (P <sub>2</sub> O <sub>5</sub> )	126.87	lbs/ton
Will Immediate Incorporation / Injection be performed?	No	

#### Beneficial Use Site Information

Soil Phosphorus	47.00	ppm	Mehlich 3		
	41.36	ppm			
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor or the <i>Phosphorus Index</i> :					
County	Shelby				
Soil Type	Crosby silt loam, 0 to 2 percent slopes				
Hydrologic Soil Group	C				
Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Crop Nitrogen Requirements (Year 1)	200	lbs/acre			
Existing Available Nitrogen	30	lbs/acre			
Non-Biosolids Nitrogen Application	45	lbs/acre			
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	0	lbs/acre			
Non-Biosolids Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Application	0	lbs/acre			
Biosolids Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficial Use	252.08	lbs/acre			
Total Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	252.08	lbs/acre			

#### Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perennial stream.	0
Runoff Class - Slope Range	1-3%	4
Soil Phosphorus		2.90
Application - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		0
Method - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	None applied.	0
Application - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		15.12
Method - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.	1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		28.02

#### Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.99	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre

Phosphorus Index      Medium potential for phosphorus runoff. Use the Nitrogen Agronomic Rate.

#### Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	60	dry tons
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficially Used Per Acre	252.05	lbs/acre
Acreage	30.2	
Date Biosolids Delivered to Beneficial Use Site	4/23/2019	
Dates of Beneficial Use	5/8/2019	to 5/8/2019
Total Days Biosolids Stored at Beneficial Use Site	15.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No

Is a permanent sign posted at the beneficial use site?



Ohio Environmental Protection Agency

Division of Surface Water

### Biosolids Agronomic Rate Calculation Worksheet

#### General Information

Ohio EPA #	KIRK-2	
Field ID #	KIRK-2	
Generator Name	City of Sidney WWTP	

#### Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00	mg/kg
Total Kjeldahl Nitrogen	54600.00	mg/kg
Total Phosphorus	27700.00	mg/kg
Organic Nitrogen	85.20	lbs/ton
Available Nitrogen	49.56	lbs/ton
Phosphate (P <sub>2</sub> O <sub>5</sub> )	126.87	lbs/ton
Will Immediate Incorporation / Injection be performed?	No	

#### Beneficial Use Site Information

Soil Phosphorus	70.00	ppm	Mehlich 3		
	61.60	ppm			
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided <i>Soil Phosphorus</i> result, you must utilize the most limiting factor or the <i>Phosphorus Index</i> :					
The Nitrogen Agronomic Rate, the Multi-Year Phosphate Agronomic Rate, or the Phosphorus Index.					
County	Shelby				
Soil Type	Crosby silt loam, 0 to 2 percent slopes				
Hydrologic Soil Group	C				
Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Crop Nitrogen Requirements (Year 1)	200	lbs/acre			
Existing Available Nitrogen	30	lbs/acre			
Non-Biosolids Nitrogen Application	45	lbs/acre			
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	0	lbs/acre			
Non-Biosolids Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Application	0	lbs/acre			
Biosolids Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficial Use	249.67	lbs/acre			
Total Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer Application	249.67	lbs/acre			

#### Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is adjacent to an intermittent or perennial stream.	4
Runoff Class - Slope Range	1-3%	4
Soil Phosphorus		4.31
Application - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		0
Method - Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	None applied.	0
Application - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer		14.98
Method - Organic Phosphate (P <sub>2</sub> O <sub>5</sub> ) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.	1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		33.29

#### Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.97	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre

Phosphorus Index  
High potential for phosphorus runoff. Use the Phosphate Agronomic Rate (single or multi year).

#### Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	61	dry tons
Phosphate (P <sub>2</sub> O <sub>5</sub> ) Beneficially Used Per Acre	249.64	lbs/acre
Acreage	31	
Date Biosolids Delivered to Beneficial Use Site	4/17/2019	
Dates of Beneficial Use	4/30/2019	to 4/30/2019
Total Days Biosolids Stored at Beneficial Use Site	13.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No
		Is a permanent sign posted at the beneficial use site?



Ohio Environmental Protection Agency

Division of Surface Water

### Biosolids Agronomic Rate Calculation Worksheet

#### General Information

Ohio EPA #	Deerpen-1
Field ID #	Deerpen-1
Generator Name	City of Sidney WWTP

#### Biosolids Data and Beneficial Use Methods

Ammonia Nitrogen	12000.00	mg/kg
Total Kjeldahl Nitrogen	54600.00	mg/kg
Total Phosphorus	27700.00	mg/kg
Organic Nitrogen	85.20	lbs/ton
Available Nitrogen	49.56	lbs/ton
Phosphate ( $P_2O_5$ )	126.87	lbs/ton
Will Immediate Incorporation / Injection be performed?	No	

#### Beneficial Use Site Information

Soil Phosphorus	39.00	ppm	Mehlich 3		
	34.32	ppm			
Please note that the agronomic rates and phosphorus index have been calculated within the <i>Calculated Agronomic Rates</i> section; however, based upon the above provided Soil Phosphorus result, you must utilize the most limiting factor of the Phosphorus Index:					
County	Shelby				
Soil Type	Crosby silt loam, 0 to 2 percent slopes				
Hydrologic Soil Group	C				
Year 1	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 2	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 3	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Corn (Grain)				
Expected Crop Yield(s)(bu/acre or tons/acre)	185				
Year 4	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)	Soybean				
Expected Crop Yield(s)(bu/acre or tons/acre)	60				
Year 5	Crop 1	Crop 2	Crop 3	Crop 4	Crop 5
Crop Type(s)					
Expected Crop Yield(s)(bu/acre or tons/acre)					
Crop Nitrogen Requirements (Year 1)	200	lbs/acre			
Existing Available Nitrogen	30	lbs/acre			
Non-Biosolids Nitrogen Application	45	lbs/acre			
Phosphate ( $P_2O_5$ ) Fertilizer Application	0	lbs/acre			
Non-Biosolids Organic Phosphate ( $P_2O_5$ ) Application	0	lbs/acre			
Biosolids Phosphate ( $P_2O_5$ ) Beneficial Use	242.44	lbs/acre			
Total Organic Phosphate ( $P_2O_5$ ) Fertilizer Application	242.44	lbs/acre			

#### Phosphorus Index

Soil Loss	5 tons/acre/year	Subvalue
Connectivity to "waters of the State"	Concentrated flow does not leave the beneficial use site and is not adjacent to an intermittent or perennial stream.	0
Runoff Class - Slope Range	1-3%	4
Soil Phosphorus		2.40
Application - Phosphate ( $P_2O_5$ ) Fertilizer		0
Method - Phosphate ( $P_2O_5$ ) Fertilizer	None applied.	0
Application - Organic Phosphate ( $P_2O_5$ ) Fertilizer		14.55
Method - Organic Phosphate ( $P_2O_5$ ) Fertilizer	Incorporation in ≤ one week or applied on 50% to 80% cover.	1
Does runoff flow through a filter strip designed per USDA Ohio-NRCS Field Office Technical Guide Standard 393?	No	0
Total Phosphorus Index		26.95

#### Calculated Agronomic Rates

Nitrogen Agronomic Rate	1.91	dry tons/acre
i. Calculated Agronomic Rate	2.52	dry tons/acre
Single Year Phosphate Agronomic Rate	0.58	dry tons/acre
Multi-Year Phosphate Agronomic Rate	1.92	dry tons/acre

Phosphorus Index      Medium potential for phosphorus runoff. Use the Nitrogen Agronomic Rate.

#### Beneficial Use Site Records

Quantity of Biosolids Beneficially Used	13	dry tons
Phosphate ( $P_2O_5$ ) Beneficially Used Per Acre	242.54	lbs/acre
Acreage	6.8	
Date Biosolids Delivered to Beneficial Use Site	4/24/2019	
Dates of Beneficial Use	5/6/2019	to 5/6/2019
Total Days Biosolids Stored at Beneficial Use Site	12.00	Days
Date Signage Posted at Beneficial Use Site	4/10/2019	<input type="checkbox"/> Yes
Date Signage Removed from Beneficial Use Site	6/10/2019	<input type="checkbox"/> No

Is a permanent sign posted at the beneficial use site?

**City of Sidney  
Biosolids Conversion Factors & Grades**

mg/kg dry = part per million (ppm)  
mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 \* 2000 = lbs/dry ton  
Ex: 100 mg/kg / 1,000,000 \* 2000 = 0.2 lbs/dry ton  
OR  
mg/kg dry \*2 / 1000 = lbs/dry ton  
Ex: 100 mg/kg \*2 / 1000 = 0.2 lbs/dry ton  
OR  
mg/kg \* 0.002 = lbs/dry ton  
Ex: 100 mg/kg \*.002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019

Final Grade Report

<b>Site:</b>	Scott Farm
	SCOTT-1 M+S
<b>Total Dry Tons:</b>	60.00
	<b>Total Acres:</b> 30.2
<b>Dry Tons / Acre:</b>	1.99
	<b>Spreadable Acres:</b> 30.2
<b>Land Owner:</b>	Eric Smith
<b>Farm Operator:</b>	Eric Smith
<b>soil test P 40-100 ppm (Bray) or 45-115 ppm (MIII)</b>	
<b>not to exceed N needs or multi-crop P2O5</b>	

**Sludge Analysis May 2019**

			<b>Application @</b>	<b>Commercial Fertilizer</b>
			<b>1.99 D.T.</b>	<b>Equivalency (lbs/acre)</b>
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.2 lbs/acre
Total Potassium as K2O (Total Potassium * 1.2)	1872 mg/kg dry	=	3.7 lbs/dry ton	7.4 lbs/acre
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	110.1 lbs/acre
Total Phosphorus as P2O5 (Total Phosphorus * 2.29)	63433 mg/kg dry	=	126.9 lbs/dry ton	252.1 lbs/acre
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	47.7 lbs/acre
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	169.3 lbs/acre
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	217.0 lbs/acre
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.1 lbs/acre
				8.6 36% Zinc Sulfate

**Sludge as a Grade (N - P2O5 - K2O)**

**N P2O5 K2O**

**0.0546 0.06343 0.00187**

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate  
(lbs/acre applied)**

<b>N</b>	<b>P2O5</b>	<b>K2O</b>
<b>217</b>	<b>252</b>	<b>7</b>

*(values reflect the values above)*

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes  
K2O = Potash, the nutrient form of potassium in which a crop utilizes

This is a class "B" sewage sludge produced by The City of Sidney at 1091 Childrens Home Road Sidney Oh 45365.  
The vector attraction Option #1 is met by reducing the volatile content of the sludge by a minimum of 38%.  
The pathogen reduction Option #1 is met by fecal coliform testing with results less than 2,000,000 cfu/dry gram.  
Ohio NPDES permit number for this facility is 1PD00009\*QD  
For more information please call 937-498-8720 or the Ohio EPA Division of Surface Water 800-644-2001

**City of Sidney  
Biosolids Conversion Factors & Grades**

mg/kg dry = part per million (ppm)  
mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 \* 2000 = lbs/dry ton  
Ex: 100 mg/kg / 1,000,000 \* 2000 = 0.2 lbs/dry ton  
OR  
mg/kg dry \*2 / 1000 = lbs/dry ton  
Ex: 100 mg/kg \*2 / 1000 = 0.2 lbs/dry ton  
OR  
mg/kg \* 0.002 = lbs/dry ton  
Ex: 100 mg/kg \*.002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019

Final Grade Report

**Site:** Kirkwood Farm  
KIRK-1

**Total Dry Tons:** 85.00 **Total Acres:** 43.70

**Dry Tons / Acre:** 1.98 **Spreadable Acres:** 43.00

**Land Owner:** Eric Smith  
**Farm Operator:** Eric Smith

**soil test P 40-100 ppm (Bray) or 45-115 ppm (MILLI)**  
**not to exceed N needs or multi-crop P2O5**

**Sludge Analysis May 2019**

			<b>Application @ 1.98 D.T.</b>	<b>Commercial Fertilizer Equivalency (lbs/acre)</b>		
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.2 lbs/acre		
Total Potassium as K2O (Total Potassium * 1.2)	1872 mg/kg dry	=	3.7 lbs/dry ton	7.4 lbs/acre	12.3	0-0-60
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	109.5 lbs/acre		
Total Phosphorus as P2O5 (Total Phosphorus * 2.29)	63433 mg/kg dry	=	126.9 lbs/dry ton	250.8 lbs/acre	482.3	11-52-0
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	47.4 lbs/acre	169.4	28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	168.4 lbs/acre	601.5	28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	215.9 lbs/acre	770.9	28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.1 lbs/acre	8.6	36% Zinc Sulfate

**Sludge as a Grade (N - P2O5 - K2O)**  
N P2O5 K2O  
**0.0546 0.06343 0.00187**

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate  
(lbs/acre applied)**

**N P2O5 K2O**  
**216 251 7**

*(values reflect the values above)*

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes  
K2O = Potash, the nutrient form of potassium in which a crop utilizes

This is a class "B" sewage sludge produced by The City of Sidney at 1091 Childrens Home Road Sidney Oh 45365.  
The vector attraction Option #1 is met by reducing the volatile content of the sludge by a minimum of 38%.  
The pathogen reduction Option #1 is met by fecal coliform testing with results less than 2,000,000 cfu/dry gram.  
Ohio NPDES permit number for this facility is 1PD00009\*QD  
For more information please call 937-498-8720 or the Ohio EPA Division of Surface Water 800-644-2001

**City of Sidney**  
**Biosolids Conversion Factors & Grades**

mg/kg dry = part per million (ppm)  
 mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 \* 2000 = lbs/dry ton  
 Ex: 100 mg/kg / 1,000,000 \* 2000 = 0.2 lbs/dry ton  
 OR  
 mg/kg dry \*2 / 1000 = lbs/dry ton  
 Ex: 100 mg/kg \*2 / 1000 = 0.2 lbs/dry ton  
 OR  
 mg/kg \* 0.002 = lbs/dry ton  
 Ex: 100 mg/kg \*.002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019

Final Grade Report

<b>Site:</b>	Deerpen Farm DEERPEN-1	<b>Total Dry Tons:</b>	13.00	<b>Total Acres:</b>	19.0
<b>Dry Tons / Acre:</b>	1.91	<b>Spreadable Acres:</b>	6.8		
<b>Land Owner:</b>	Eric Smith	<b>Farm Operator:</b>	Eric Smith		
<b>soil test P &lt; 40 ppm (Bray) or 45 ppm (MILLI)</b>					
<b>not to exceed N needs or 250 lbs/a P2O5</b>					

**Sludge Analysis May 2019**

			<b>Application @</b> 1.91 D.T.	<b>Commercial Fertilizer</b> <b>Equivalency (lbs/acre)</b>		
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.0 lbs/acre		
Total Potassium as K2O (Total Potassium * 1.2)	1872 mg/kg dry	=	3.7 lbs/dry ton	7.2 lbs/acre	11.9	0-0-60
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	105.9 lbs/acre		
Total Phosphorus as P2O5 (Total Phosphorus * 2.29)	63433 mg/kg dry	=	126.9 lbs/dry ton	242.5 lbs/acre	466.4	11-52-0
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	45.9 lbs/acre	163.9	28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	162.9 lbs/acre	581.7	28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	208.8 lbs/acre	745.6	28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.0 lbs/acre	8.3	36% Zinc Sulfate

**Sludge as a Grade (N - P2O5 - K2O)**

**N      P2O5      K2O**

**0.0546    0.06343    0.00187**

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate  
(lbs/acre applied)**

**N      P2O5      K2O**  
**209      243      7**

(values reflect the values above)

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes  
 K2O = Potash, the nutrient form of potassium in which a crop utilizes

This is a class "B" sewage sludge produced by The City of Sidney at 1091 Childrens Home Road Sidney Oh 45365.  
 The vector attraction Option #1 is met by reducing the volatile content of the sludge by a minimum of 38%.  
 The pathogen reduction Option #1 is met by fecal coliform testing with results less than 2,000,000 cfu/dry gram.  
 Ohio NPDES permit number for this facility is 1PD00009\*QD  
 For more information please call 937-498-8720 or the Ohio EPA Division of Surface Water 800-644-2001

**City of Sidney**  
**Biosolids Conversion Factors & Grades**

mg/kg dry = part per million (ppm)  
 mg/kg dry = 0.000001 lbs

mg/kg dry / 1,000,000 \* 2000 = lbs/dry ton  
 Ex: 100 mg/kg / 1,000,000 \* 2000 = 0.2 lbs/dry ton  
 OR  
 mg/kg dry \*2 / 1000 = lbs/dry ton  
 Ex: 100 mg/kg \*2 / 1000 = 0.2 lbs/dry ton  
 OR  
 mg/kg \* 0.002 = lbs/dry ton  
 Ex: 100 mg/kg \*.002 = 0.2 lbs/dry ton

Data from Sludge Analysis 5/15/2019  
 Final Grade Report

**Site:** Lindsey Rd Farm  
 LinRd-3 M+S  
**Total Dry Tons:** 62.00      **Total Acres:** 31.80  
**Dry Tons / Acre:** 1.95      **Spreadable Acres:** 31.80  
**Land Owner:** Eric Smith  
**Farm Operator:** Eric Smith  
**soil test P 40-100 ppm (Bray) or 45-115 ppm (MIII)**  
**not to exceed N needs or multi-crop P2O5**

**Sludge Analysis May 2019**

			<b>Application @</b> <b>1.95 D.T.</b>	<b>Commercial Fertilizer</b> <b>Equivalency (lbs/acre)</b>		
Total Potassium	1560 mg/kg dry	=	3.1 lbs/dry ton	6.1 lbs/acre		
Total Potassium as K2O <i>(Total Potassium * 1.2)</i>	1872 mg/kg dry	=	3.7 lbs/dry ton	7.3 lbs/acre	12.2	0-0-60
Total Phosphorus	27700 mg/kg dry	=	55.4 lbs/dry ton	108.0 lbs/acre		
Total Phosphorus as P2O5 <i>(Total Phosphorus * 2.29)</i>	63433 mg/kg dry	=	126.9 lbs/dry ton	247.3 lbs/acre	475.7	11-52-0
Ammonia Nitrogen	12000 mg/kg dry	=	24.0 lbs/dry ton	46.8 lbs/acre	167.1	28-0-0
Organic Nitrogen	42600 mg/kg dry	=	85.2 lbs/dry ton	166.1 lbs/acre	593.3	28-0-0
TKN	54600 mg/kg dry	=	109.2 lbs/dry ton	212.9 lbs/acre	760.4	28-0-0
Zinc	782 mg/kg dry	=	1.6 lbs/dry ton	3.0 lbs/acre	8.5	36% Zinc Sulfate

**Sludge as a Grade (N - P2O5 - K2O)**

**N      P2O5      K2O**

**0.0546    0.06343    0.00187**

Calculate by dividing the lbs/dry ton by 2000lbs/D.T.

**Using Grade @ application D.T./Acre rate  
(lbs/acre applied)**

**N      P2O5      K2O**  
**213      247      7**

*(values reflect the values above)*

P2O5 = Phosphate, the nutrient form of phosphorus in which a crop utilizes  
 K2O = Potash, the nutrient form of potassium in which a crop utilizes

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 Ohio NPDES permit number for this facility is 1PD00009\*QD  
 For more information please call 937-498-8720 or the Ohio EPA Division of Surface Water 800-644-2001