Wastewater Land Application
Rate Calculator and Form

Insert the data into the boxes below:

	%	Total Solids
	%	Kjeldahl nitrogen
	%	Ammonia nitrogen
	%	Sodium
	%	Organic N availability factor (use 100% unless otherwise determined by approved study)
	%	Ammonia N availability factor (use 75% for surface appl'n or 100% for immed incorp or injection
	Lbs/acre	Maximum Allowed Nitrogen Application (MANA) rate
	Lbs/acre protection	Nitrogen credits (from fertilizer, manure, other sources)
0.00	Lb N/dry ton	Available N per dry ton
0.00	Lb/acre	Crop N needed

The information in the boxes below has been calculated for your application:

NaN	gallons/acre	Maximum application rate based on nitrogen addition
Infinity	gallons/acre	Maximum application rate based on sodium addition
Infinity	gallons/acre	Allowed application rate

Example				**Your Facility**			
Crop	Corn	Yield goal	150 bu/ac	Crop		Yield goal	bu/ac
Soil OM	2%	Last Year's Crop	Soybeans	Soil OM		Last Year's Crop	
	Recommended Crop N rate		110 lbs/acre		Recommended Crop N rate		lbs/acre
	N credits		30 lbs/acre		N credits		lbs/acre
Wastewater Analysis	Total Solids		5.0 %	Wastewater Analysis	Total Solids		%
	Kjeldahl N		3.3 %		Kjeldahl N		%
	Ammonia N		0.8 %		Ammonia N		%
	Organic N Availability		100 %		Organic N Availability		%
	Sodium		2.75 %		Sodium		%
Application Method:	Surface apply			Application Method:			

		Example			Your Facility	
1. Crop N requirement						
	amount of N recommended or allowed by DNR	110	lbs/acre			lbs/acre
-	N credits (manure, starter fertilizer, other source)	30		-		lbs/acre
=	additional N required	80		=	0.00	lbs/acre
2. Wastewater organic N						
	% kjeldahl in wastewater ÷ 100	0.033			0.00	
-	% ammonia in wastewater ÷ 100	0.008		-	0.00	
=	% organic N in wastewater (decimal fraction)	0.025		=	0.00	
x	2000 lbs per ton	x 2000	lbs/ton	x	2000	lbs/ton
=	lbs organic N per dry ton of wastewater	50	lbs/dry ton	=		lbs/dry ton
3. Available organic N per ton of wastewater						
	lbs organic N per dry ton of wastewater	50	lbs/dry ton			lbs/dry ton
x	% N availability ÷ 100	1		x	0.00	
=	lbs organic N available per dry ton of wastewater	50	lbs/dry ton	=	0.00	lbs/dry ton
4. Available ammonia N per ton of wastewater						
	% ammonia in wastewater ÷ 100	0.008			0.00	
x	2000 lbs per ton	X 2000	lbs/ton	x	2000	lbs/ton
x	0.75 (sfc. appl'n) or 1.0 (immed incorp or injection)	0.75		x		
=	lbs ammonia N available per dry ton of wastewater	12	lbs/dry ton	=	0.00	lbs/dry ton
5. Total available N per ton of wastewater						
	lbs organic N available per dry ton of wastewater	50	lbs/dry ton			lbs/dry ton
+	lbs ammonia N available per dry ton of wastewater	12	lbs/dry ton	+	0.00	lbs/dry ton
=	lbs total available N per dry ton of wastewater	62	lbs/dry ton	=	0.00	lbs/dry ton
6. Allowable wastewater rate based on nitrogen						
	lbs N per acre needed for crop	80	lbs/acre		-1.00	lbs/acre
÷	lbs total available N per dry ton of wastewater	62	lbs/dry ton	÷	0.00	lbs/dry ton
=	dry tons of wastewater allowed per acre based on N	1.29	dry tons/acre	=	NaN	dry tons/acre
7. Allowable wastewater rate based on sodium						
	% sodium in wastewater ÷ 100	0.0275			0.00	
x	2000 lbs per ton	x 2000	lbs/ton	x	2000	lbs/ton
=	lbs sodium per dry ton of wastewater	55	lbs/dry ton	=	0.00	lbs/dry ton
	sodium limit	170	lbs/acre		170	lbs/acre
÷	lbs sodium per dry ton of wastewater	55	lbs/dry ton	÷	0.00	lbs/dry ton
=	dry tons of wastewater allowed per acre based on sodium	3.09	dry tons/acre	=		dry tons/acre
8. Allowable application rate						
	Most limiting allowed rate based on nitrogen or sodium	1.29	dry tons/acre		0.00	dry tons/acre
x	240 (conversion factor)	x 240		x	240	
÷	% total solids in wastewater ÷ 100	0.05		÷	0.00	
=	Gallons of wastewater allowed per acre	6,194	gallons/acre	=		gallons/acre