

# STATE BIOSOLIDS SURVEY

## Kansas

		r		
	2004 Data	2018 Data		
Total Number of WWTPs	25 (survey), 634 CWNS	52 (survey), 623 (CWNS)		
WWTP & Biosolic	ds Infrastructure Totals			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	0	no data		1
Total number of your state's WWTPs sending to those Separate Preparers:	0	no data		]
Number of operating sludge incinerators in your state (total):	1	0		
Fluidized bed:	no data	0		
Multiple hearth:	no data	0		
Number of Part 258 landfills in your state accepting sewage sludge:	data not requested for 2004	no data		The data presented here come primarily from two sources: the U.S. EPA's ECHO database; NBDP's survey of WRRFs. 39 facilities
Number of WWTPs in your state with industrial pre-treatment programs:	data not requested for 2004	no data		submitted annual reports to ECHO, and 14 WRRFs responsed to NBDP's survey, 8 of which also had submitted ECHO reports. Data
Number of WWTPs in your state with sludge lagoons:	data not requested for 2004	several		from those 45 individual WRRFs did not meet NBDP's goal of representing at least 75% of the statewide average wastewater flow (MGD). So, solids used or disposed were calculated for an additional 7 WRRFs, multiplying daily wastewater flows (MGD) from Seiple e
Wastewa	ter Flow Totals			al. 2020 and the average dmt/MGD of the WRRFs reporting data to ECHO or NBDP (230 dmt/MGD). • Percentage of state on s
Total statewide average daily wastewater flow (MGD):	data not requested for 2004	306		systems is estimated based on the NBDP estimate from 2004.
Total statewide WWTP design capacity for wastewater flow (MGD):	data not requested for 2004	no data		
Total statewide average daily dry weather flow (MGD):	data not requested for 2004	no data		]
Oth	er Totals			
Number of documented odor & nuisance complaints received by state in 2018 related to biosolids transportation and use or disposal outside of the gates of the WWTP:	data not requested for 2004	0		
Number of WWTPs involved in those complaints:	data not requested for 2004	0		]
Percent of population served by on-site systems (e.g. septic systems):	40%	40%		1

#### **Biosolids Use and Disposal**

UNITS         unit         Dry metric tons           BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total):         38,000					s und Disposu	-
Summary       Number of Entities (WVTPs & Quantity of Biosolids     Number of Entities (WVTPs & Quantity of Biosolids       Beneficial Use (applied to solls, not including ADC)     10     11.688     46     20.185       Object     10     11.688     46     20.185       Other market Object     0     0     0       Other market Object     0     0     0       Other market Object     2     2.8268     53     3.733       Description of Colspan="2">Countity of Biosolids       Sep. Preparent Going To     Countity of Biosolids     59     Preparent Going To       Apricultural (EQ, Class A, & Class B)     0     0     0     0       Apricultural (EQ, Class A, & Class B)     0     0     0     0       Or name where it wonth     1     3     4.37       Beneficial Use Subtral     1     1.1488     46     29.165       Or name where it wonth     0     0     0     0       Class A & Class B)     0     0     0     0       Object     0     0     0     0       Class A & Class A, & Class B)     0     0     0     0       Class A & Class A, & Class A, & Class B     0     0     0     0 <tr< th=""><th></th><th>UNITS:</th><th>Dry metric tons (revs'd dry U.S. tons)</th><th>Dry metric tons</th><th></th><th></th></tr<>		UNITS:	Dry metric tons (revs'd dry U.S. tons)	Dry metric tons		
Number of Entities (WVTPs & Sep. Prepares) Going To         Number of Entities (WVTPs & Quantity of Blosolids         NOTE: Quantity of sewage sludge or blosolids used or disposed means the quantity that goes out the gate of the WVTPs. Use the units (the form of measurement) you chose above.           Disposal & Alternative Disposition         11         44         29,165         For the 7 WRFs for which quantities of solids were estimated by NBCP, it was assumed that the majority were land applied and the other the set were to landfill, based on information from municipal and utility websites and statewide tends.           Other         0         0         0         For the 7 WRFs for which quantities of solids were estimated by NBCP, it was assumed that the majority were land applied and the next were to landfill, based on information from municipal and utility websites and statewide tends.           TOTAL         28         28,965         53         37,733           Arguintural (EQ, Class A, & Class B)         9         10.877         43         28,728           For estimative (EQ, Class A, & Class B)         0         0         0         0           Or anarthy of Blosolids         3         437         3         437           Sep. Prepares (Going To         Quantity of Blosolids         9         0         0           or anare where it went)         1         10         11,888         46         29,165           Long-term storage		<b>BIOSOLIDS USE</b>	O OR DISPOSED, 20			
Number of Entities (WVTPs & Sep. Prepares) Going To         Quantity of Blooklids         Number of Entities (WVTPs & Sep. Prepares) Going To         Wumber of Entities (WVTPs & Sep. Prepares) Going To         Guantity of Blooklids         Sep. Prepares) Going To         Guantity of Blooklids           Mumber of Entities (WVTPs & Sep. Prepares) Going To         Guantity of Blooklids         Sep. Prepares) Going To         Guantity of Blooklids         Sep. Prepares) Going To         Guantity of Blooklids         Sep. Prepares) Going To         Guantit						
Disposal & Atternative Dispositions       15       17.297       7       8,568       For the 7 WRPFs for which quantities of solids were estimated by MBDP. It was assumed that the majority were land applied and the rest went to landfill, based on information from municipal and utility websites and statewide trends.         Other       0			Quantity of Biosolids		Quantity of Biosolids	NOTE: Quantity of sewage sludge or biosolids used or disposed means the quantity that goes out the gate of the WWTPs. Use the units (the form of measurement) you chose above.
Other         O         O         Instrument of the set of t	Beneficial Use (applied to soils, not including ADC)	10	11,688	46	29,165	
TOTAL     25     28,985     53     37,733       Beneficial Use       Agricultural (EQ, Class A, & Class B)     Quantity of Blosolids     Sep. Preparens) Going To     Quantity of Blosolids       Agricultural (EQ, Class A, & Class B)     0     0     0       Reclamation (EQ, Class A, & Class B)     0     0     0       Reclamation (EQ, Class A, & Class B)     0     0     0       rousure where it went)     1     811     3     437       Beneficial Use Subtotal     10     11,688     46     29,165       Long-term storage     0     0     2     1,291       Disposal & Alternative Dispositions       Number of acres to which blosolids were applied:     no data     no data       Number of Entities (WWTPs & Sep. Preparens) Going To     Quantity of Blosolids     Quantity of Blosolids       Sep. Preparens (Ging To     Quantity of Blosolids     Number of Entities (WWTPs & Sep. Preparens) Going To     Quantity of Blosolids	Disposal & Alternative Dispositions	15	17,297	7	8,568	For the 7 WRRFs for which quantities of solids were estimated by NBDP, it was assumed that the majority were land applied and the
Beneficial Use         Agricultural (EQ, Class A, & Class B)       Quantity of Biosolids       Sep. Preparers) Going To       Quantity of Biosolids         Agricultural (EQ, Class A, & Class B)       0       0       0         O 0       0       0       0         Reclamation (EQ, Class A, & Class B)       0       0       0         O 0       0       0       0         Class A, S Class B)       0       0       0         Class A, S Class B)       0       0       0         Class A, S Class B)       0       0       0         or unsure where it went)       1       811       3       437         Beneficial Use Subtotal       10       11,688       46       29,165         Long-term storage       0       0       0 data       mo data         Disposal & Altermative Dispositions         Disposal & Altermative Dispositions         Quantity of Biosolids         Sep. Preparers) Going To       Quantity of Biosolids         Sep. Preparers) Coing To         Quantity of Biosolids         Sep. Preparers) Coing To         Quantity of Biosolids       Sep. Preparers) Coi	Other	0	0			
Beneficial Use         Agricultural (EQ, Class A, & Class B)       Quantity of Biosolids       Sep. Preparers) Going To       Quantity of Biosolids         Agricultural (EQ, Class A, & Class B)       0       0       0         O 0       0       0       0         Reclamation (EQ, Class A, & Class B)       0       0       0         O 0       0       0       0         Class A, S Class B)       0       0       0         Class A, S Class B)       0       0       0         Class A, S Class B)       0       0       0         or unsure where it went)       1       811       3       437         Beneficial Use Subtotal       10       11,688       46       29,165         Long-term storage       0       0       0 data       mo data         Disposal & Altermative Dispositions         Disposal & Altermative Dispositions         Quantity of Biosolids         Sep. Preparers) Going To       Quantity of Biosolids         Sep. Preparers) Coing To         Quantity of Biosolids         Sep. Preparers) Coing To         Quantity of Biosolids       Sep. Preparers) Coi	τοται	25	28 985	53	37 733	
Agricultural (EQ, Class A, & Class B)         0						
Forestland (EQ, Class A, & Class B)         0         0         0           Reclamation (EQ, Class A, & Class B)         0         0         0           Class A (E) Class A, & Class B)         0         0         0           Class A (E) Class A, & Class B)         0         0         0           or unsure where it went)         1         811         3         437           Beneficial Use Subtolal         10         11,688         46         29,165           Long-term storage         0         0         2         1,291   Number of acres to which biosolids were applied:           no data         no data         no data   Landfill (total)           Number of Entities (WWTPs & Sep. Preparers) Going To         Quantity of Biosolids         Quantity of Biosolids   Landfill (total)           10         10,355         6         8,521		Sep. Preparers) Going To				4
Reclamation (EQ, Class A, & Class B)       0       0       0         Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)       1       811       3       437         Beneficial Use Subtotal       10       11,688       46       29,165       1       1         Long-term storage       0       0       2       1,291       1		9	10,877			
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)       1       811       3       437         Beneficial Use Subtotal       10       11,688       46       29,165         Long-term storage       0       0       2       1,291         Number of acres to which biosolids were applied:         Number of acres to which biosolids were applied:       no data         Number of Entities (WVTPs & Sep. Preparers) Going To         Number of Entities (WVTPs & Sep. Preparers) Going To       Quantity of Biosolids       Quantity of Biosolids         Landfill (total)       14       10,355       6       8,521		0	0	0	-	
or unsure where it went) 1 811 3 437 Beneficial Use Subtotal 10 11,688 46 29,165 Long-term storage 0 0 0 2 1,291 Number of acres to which biosolids were applied: no data no data Number of acres to which biosolids were applied: 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0		0	0	0	0	
Beneficial Use Subtotal     10     11,688     46     29,165       Long-term storage     0     0     2     1,291       Number of acres to which biosolids were applied:     no data     no data       Disposal & Alternative Dispositions       Number of Entities (WVTPs & Sep. Preparers) Going To     Quantity of Biosolids     Quantity of Biosolids       Landfill (total)     14     10,355     6     8,521						
Long-term storage     0     0     2     1,291       Number of acres to which biosolids were applied:     no data     no data       Disposal & Alternative Dispositions       Disposal & Alternative Dispositions       Number of Entities (WVTPs & Sep. Preparers) Going To     Quantity of Biosolids       Sep. Preparers) Going To     Quantity of Biosolids     Quantity of Biosolids       Landfill (total)     14     10,355     6	or unsure where it went)	1	811	3	437	
Number of acres to which biosolids were applied:     no data       Number of acres to which biosolids were applied:     no data       Disposal & Alternative Dispositions       Disposal & Alternative Dispositions       Number of Entities (WWTPs & Sep. Preparers) Going To     Quantity of Biosolids       Sep. Preparers) Going To     Quantity of Biosolids       14     10,355     6	Beneficial Use Subtotal	10	11,688	46	29,165	
Disposal & Alternative Dispositions       Number of Entities (WWTPs & Sep. Preparers) Going To     Number of Entities (WWTPs & Sep. Preparers) Going To     Number of Entities (WWTPs & Sep. Preparers) Going To       Landfill (total)     14     10,355     6     8,521	Long-term storage	0	0	2	1,291	]
Disposal & Alternative Dispositions       Number of Entities (WWTPs & Sep. Preparers) Going To     Number of Entities (WWTPs & Sep. Preparers) Going To     Number of Entities (WWTPs & Sep. Preparers) Going To       Landfill (total)     14     10,355     6     8,521				]		
Number of Entities (WWTPs & Sep. Preparers) Going To     Quantity of Biosolids     Number of Entities (WWTPs & Sep. Preparers) Going To     Quantity of Biosolids       Landfill (total)     14     10,355     6     8,521	Number of acres to which biosolids were applied:		no data		no data	
Sep. Preparers) Going To         Quantity of Biosolids         Sep. Preparers) Going To         Quantity of Biosolids           Landfill (total)         14         10,355         6         8,521						
			,		,	
Burial data not requested for 2004 data not requested for 2004 4 4,099	Landfill (total)	14		-		4
	Burial	data not requested for 2004	data not requested for 2004	4	4,099	]

TOTAL	25	28,985	53	37,733
Disposal & Alternative Dispositions Subtotal	15	17,297	7	8,568
Pyrolysis	data not requested for 2004	data not requested for 2004	0	0
Gasification	data not requested for 2004	data not requested for 2004	0	0
Deep well injection	data not requested for 2004	data not requested for 2004	0	0
Cement kiln or industrial furnace	data not requested for 2004	data not requested for 2004	0	0
Incineration	1	6,942	0	0
Surface Disposal	0	0	1	47
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	2	4,422

### **Biosolids Quality Summary**

	Number of Entities (WWTPs & Sep. Preparers) Producing	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Producing		NOTE: For "number of entities," the total may not match because some entities go to more than one use or disposal.
Class A EQ	1	811	5	1,199	
Other Class A	1	0	1	1	
Class B	140	10,877	36	21,954	"Other" here includes the 7 facilities for which data were estimated, plus some facilities landfilling solids without tracking quality.
Other (no data, etc.)	15	17,297	14	14,579	
TOTAL	157	28,985	56	37,733	

#### **Biosolids Treatment Practices**

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	Estimated Number of WWTPs		Estimated Number of WWTPs or		
	or Separate Preparers Using	Produced Using	Separate Preparers Using	Produced Using	
Stabilization					
Aerobic Digestion (total)	75	no data	22+		
Class A (ATAD/Other)	data not requested for 2004	data not requested for 2004			
Class B	data not requested for 2004	data not requested for 2004			
Anaerobic digestion (AD) (total)	25	no data	11+		
Class A (e.g. thermophilic)	data not requested for 2004	data not requested for 2004			
Class B (mesophilic)	data not requested for 2004	data not requested for 2004			
WWTPs co-digesting (FOG, food, glycol, etc.)	data not requested for 2004	data not requested for 2004		N/A	
Biogas used (heating, electicity, fuel, etc.;scf/year)	data not requested for 2004	data not requested for 2004		N/A	
Lime/Alkaline (total)	2	no data	1		
Class A lime/alkaline	data not requested for 2004	data not requested for 2004			
Class B lime/alkaline	data not requested for 2004	data not requested for 2004			
Composting	1	no data	1	300	
Thermal (e.g. heat drying, not incineration/gasificatn/pyrol)	0	no data			
Gasification	data not requested for 2004	data not requested for 2004			
Pyrolysis	data not requested for 2004	data not requested for 2004			
Hydrolysis (thermal, chemical, etc.)	data not requested for 2004	data not requested for 2004		N/A	
Long-term (lagoons, reed beds, etc.)	0	no data		N/A	
Oxidation ditch / extended aeration	data not requested for 2004	data not requested for 2004		N/A	
Other stabilization technology	0	no data			Data are from some of the 45 WRRFs with 2018 reports in ECHO or responses to the NBDP survey.
	Dew	vatering			
Belt Filter Press	25	no data			
Plate & Frame Press	0	no data			
Screw Press	0	no data			
Centrifuge	1	no data	1		
Vaccuum Filter	3	no data			
Drying beds (open-air)	0	no data	6+		
Solar drying (e.g. in greenhouse)	data not requested for 2004	data not requested for 2004			
Other dewatering technology	0	no data			
	Thio	ckening			
Gravity thickener	data not requested for 2004	data not requested for 2004			
Gravity belt thickener (GBT)	data not requested for 2004	data not requested for 2004			1
Centrifuge	data not requested for 2004	data not requested for 2004			
Dissolved air flotation (DAF)	data not requested for 2004	data not requested for 2004			
Other thickening technology	data not requested for 2004	data not requested for 2004			
	C	Other			
Biosolids sold in bags (explain at right what size bags)		data not requested for 2004			
biosonide sold in page (explain at right what size pags)	uala not requested for 2004	uata not requested for 2004	1	1	