

West Virginia

Infrastructure & Wastewater

	2004 Data	2018 Data	
Total Number of WWTPs:	131 (survey), 217 CWNS	40	
WWTP & Biosolids Infrastructure Totals			
Number of Separate Preparers (in- or out-of-state, receiving solids from your state):	0	0	-----
Total number of your state's WWTPs sending to those Separate Preparers:	0	0	-----
Number of operating sludge incinerators in your state (total):	1	0	-----
Fluidized bed:	1	0	-----
Multiple hearth:	0	0	-----
Number of Part 258 landfills in your state accepting sewage sludge:	data not requested for 2004	several	-----
Number of WWTPs in your state with industrial pre-treatment programs:	data not requested for 2004	many	-----
Number of WWTPs in your state with <i>sludge</i> lagoons:	data not requested for 2004	some	-----
Wastewater Flow Totals			
Total statewide average daily wastewater flow (MGD):	data not requested for 2004	165	-----
Total statewide WWTP <i>design</i> capacity for wastewater flow (MGD):	data not requested for 2004	no data	-----
Total statewide average daily <i>dry weather</i> flow (MGD):	data not requested for 2004	no data	-----
Other 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	no data	-----
Number of WWTPs involved in those complaints:	data not requested for 2004	no data	-----
Percent of population served by on-site systems (e.g. septic systems):	no data	60%	-----

Data presented here come from the U.S. EPA's ECHO database and state experts, augmented by NBDP estimates. Nineteen water resource recovery facilities (WRRFs) reported managing solids to ECHO for 2018. Data for 2017 (assumed to be representative of 2018) was obtained for an additional 13 WRRFs. NBDP estimated solids quantities for an additional 14 WRRFs, using a calculation based on reported data: annual dry metric tons produced per million gallons of daily wastewater flow (dmt per MGD). Of those 14 WRRFs, end use/disposal practices were determined for three WRRFs from online sources. For the remaining 11 WRRFs, their solids end use/disposal practices were estimated based on state trends seen in reported data: 55% to landfill, 25% to agricultural land application, 20% to "Unknown," which might include surface disposal, EQ distribution, land reclamation, etc. • All together, data are presented here for 46 WRRFs, which together treat ~78% of the state's wastewater flow, and likely manage an even larger percent of the state's solids, as many small WRRFs rely on lagoons that are only cleaned out every 5-30 years. NBDP's standard for state data is to account for at least 75% of a state's average wastewater flow. • Daily average wastewater flow (MGD) is from Seiple et al. 2020. • Population relying on septic systems - 60% - is from NBDP 2004 input from WV DEP.

Biosolids Use and Disposal

UNITS:	Dry U.S. tons - CONVERTED BELOW TO DMT FOR COMPARISONS	Dry metric tons	
BIOSOLIDS USED OR DISPOSED, 2018 (adjusted total):		18,000	
Summary			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To... Quantity of Biosolids
Beneficial Use (applied to soils, not including ADC)	76	12,154	20 4,202
Disposal & Alternative Dispositions	55	13,528	25 13,168
Other	0	0	2 559
TOTAL	131	25,682	47 17,930
Beneficial Use			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To... Quantity of Biosolids
Agricultural (EQ, Class A, & Class B)	75	9,161	19 4,141
Forestland (EQ, Class A, & Class B)	0	0	0 0
Reclamation (EQ, Class A, & Class B)	1?	907	0 0
Class A EQ Distribution (bagged or bulk, public distribution, or unsure where it went)	1	2,086	1 61
Beneficial Use Subtotal	76	12,154	20 4,202
Long-term storage	0	0	
Number of acres to which biosolids were applied:	data not collected or provided		no data
Disposal & Alternative Dispositions			
	Number of Entities (WWTPs & Sep. Preparers) Going To...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Going To... Quantity of Biosolids

NOTE: Quantity of sewage sludge or biosolids used or disposed means the quantity that goes out the gate of the WWTPs. Quantities are in the units (the form of measurement) indicated above.

Landfill (total)	53	9,764	22	11,127
Burial	data not requested for 2004	data not requested for 2004	22	11,127
Alternative daily (ADC), intermediate, or final cover	data not requested for 2004	data not requested for 2004	0	0
Surface Disposal	1	680	3	2,042
Incineration	1	3,084	0	0
Cement kiln or industrial furnace	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
Gasification	data not requested for 2004	data not requested for 2004	0	0
Pyrolysis	data not requested for 2004	data not requested for 2004	0	0
Disposal & Alternative Dispositions Subtotal	55	13,528	25	13,168
TOTAL	131	25,682	45	17,930

Biosolids Quality Summary

	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	Number of Entities (WWTPs & Sep. Preparers) Producing...	Quantity of Biosolids	NOTE: For "number of entities," the total may not match because some entities go to more than one use or disposal.
Class A EQ	2	2,177	1	61	
Other Class A	0	0	0	0	
Class B	74	11,247	17	8,359	
Other (no data, etc.)	55	13,528	23	9,509	
TOTAL	131	26,952	41	17,930	

Biosolids Treatment Practices - No 2018 Data Available

	Estimated Number of WWTPs or Separate Preparers Using...	Estimated Quantity of Biosolids Produced Using...	Estimated Number of WWTPs or Separate Preparers Using...	Estimated Quantity of Biosolids Produced Using...
Stabilization				
Aerobic Digestion (total)	4	260		
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)	7	3,000		
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, electricity, fuel, etc.; scf/year)	data not requested for 2004	data not requested for 2004		N/A
Lime/Alkaline (total)	49	4,485		
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	2	2,400		
Thermal (e.g. heat drying, not incineration/gasificatn/pyroly)	0	0		
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.)	36	no data		N/A
Oxidation ditch / extended aeration	data not requested for 2004	data not requested for 2004		N/A
Other stabilization technology	no data	no data		
Dewatering				
Belt Filter Press	no data	no data		
Plate & Frame Press	no data	no data		
Screw Press	no data	no data		
Centrifuge	2	no data		
Vacuum Filter	no data	no data		
Drying beds (open-air)	no data	no data		
Solar drying (e.g. in greenhouse)	data not requested for 2004	data not requested for 2004		
Other dewatering technology	no data	no data		
Thickening				
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		
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		
Other				
Biosolids sold in bags (explain at right what size bags)	data not requested for 2004	data not requested for 2004		