

FACT SHEET: MEADOWBROOK-LIMESTONE WASTEWATER TREATMENT PLANT (WWTP)

SPDES Permit No. NY - 0027723

7530 Manlius Center Road, Kirkville, NY 13082



Service Areas

Construction of the Meadowbrook-Limestone WWTP was completed in 1973. The facility has a design flow of 6.5 MGD and provides advanced secondary treatment of wastewater using an Extended Aeration Activated Sludge Process. Wastewater is collected throughout significant sections of the Towns of Dewitt and Manlius; along with smaller portions of the Town of Pompey and the City of Syracuse. Wastewater is collected from various neighborhoods and commercial properties and transported via a series of pumping stations and gravity trunk sewers to the Meadowbrook-Limestone WWTP. The 48" Meadowbrook Trunk Sewer and the 18" Fremont Trunk Sewer enters the property via gravity feed and combines at Manhole No.2, located off the Southeast corner of the Maintenance Garage. Wastewater influent is primarily from residential and commercial sources.

Treatment Process Description

The wastewater undergoes screening and grit removal in the Headworks Building, utilizing both a bar rack and a mechanical screen rake, followed by grit removal in an aerated grit head cell, which uses a EUTEK Systems, Inc., stacked tray vortex grit removal system. Wastewater is then pumped from the influent wet well into the flow distribution box, where the flow is evenly split between two (2) aeration tanks where the activated sludge treatment process occurs. Activated sludge is treated using the Extended Aeration Process, activated sludge flows through both aerated tanks in parallel. The treated wastewater then flows to the final clarifiers where settling occurs. Activated sludge collected in the clarifiers is recirculated to the aeration tanks and/or wasted to the aerobic digestion tank. Digested sludge is thickened using a rotary drum thickener, stored in a thickened sludge holding tank and hauled to the Metropolitan-Syracuse WWTP for further treatment. Effluent from the clarifiers flows to the chlorine contact tank for seasonal disinfection using sodium hypochlorite before discharge to Limestone Creek. Total Phosphorus is removed year round with the use of ferrous chloride. Wet Weather storage tank used for high flow events.



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Treatment Plant Specifications

Performance Data (2016)

MBLS WWTP 2016		
Head Cells (Grit Removal)	(2) Cells - 16.5' l x 10' w	Average Daily Data
	10' side wall depth (swd)	
	12,300 gal / cell	
Aeration Tanks	(2) Tanks - 180' l x 60' w	Design Flow: 6.5 MGD (peak 16 MGD)
	14.30' (swd)	Avg Flow: 4.9 MGD (peak 17.9 MGD)
	1,155,300 gal / tank	Design BOD: 9,200 lbs/day
	2,310,600 gal - total	Ave Inf CBOD: 112 mg/L / 4,189 lbs/day
Settling (Clarifier) Tanks	(2) Tanks - 75' d x 10.5' swd	Ave Eff CBOD: 6.1 mg/L / 258 lbs/day
	346,800 gal / tank	Design TSS: 10,800 lbs/day
	693,700 gal - total	Ave Inf TSS: 152 mg/L / 8,025 lbs/day
Chlorine Contact Tanks	(2) Tanks - 65' l x 24.3' w	Ave Eff TSS: 9.4 mg/L / 428 lbs/day
	10' (swd) Avg. Depth / 11.6' Max	Ave Inf TP: 3.2 mg/L / 125 lbs/day
	Per. Avg=118,200 gal Max=137,100 gal	Ave Eff TP: 0.6 mg/L / 23 lbs/day
	Tot. Avg=236,400 gal & Max=274,200	Ave Inf TKN: 26.2 mg/L / 973 lbs/day
Aerobic Digester Tank	(1) Tank - 76.5' l x 70' w x 15' d	Ave Eff TKN: 1.7 mg/L / 72 lbs/day
	600,800 gal - total	Annual Information
Wet Weather Storage Tank	(1) Tank - 140' l x 70' w x 15' d	Biosolids Hauled: 1,218,778 lbs/dry
	1,099,600 gal / tank (total)	Grit Hauled: 6,808 cu ft
Decant Tank	(1) Tank - 70' l x 15' w x 15' d	Screenings Hauled: 5,285 cu ft
	117,800 gal - total	Grease Hauled: 0 gal
Thickened Sludge Holding Tank	(1) Tank - 70' l x 15' w x 15' d	Ferrous Chloride Usage: 86,905 gal
	117,800 gal - total	Na Hypochlorite Usage: 23879
		Cationic Polymer Usage: 2,325 gal
		Anionic Polymer Usage: 0 gal

SPDES Permit compliance history can be found at: <https://echo.epa.gov/>

Treatment Process Flow Diagram

