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Perimeter Sand Filter 3A filter that incorporates a sediment chamber and filter bed as parallel vaults adjacent to a parking lot.7941 68 47 -53 25 69 10 10 10 10 Organic Filter Organic FilterOrganic material such as compost or peat is used in the filter instead of sand. 88 61 30^3 41^3 -53 25 69 10 10 10 10 Bioretention 3soil matrix and is returned to the storm drain system. Includes n/a 65 n/a 49 16 97 95 10 10 10 Open Channels**Vegetated open channels that are designed to capture and treat the full water quality volume within dry or wet cells formed by check dams or other means. 80% 81 G 34 38 84^3 31 G 51 71 P I I I Open channels**Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other 80% 81 G 34 38 84^3 31 G 51 71 P I <th< td=""></th<>
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Dependence Vegetated open channels that are designed to capture and treat the full water Bit Matrix G 34 38 F 84 ⁻³ 31 G 51 71 P Open Channels** Open vegetated drainage channel or depression designed to detain water within dry or wet cells formed by check dams or other 80% 81 G 34 38 F 84 ⁻³ 31 G 51 71 P
Open Channels** Vegetated open channels that are designed to capture and treat the full water quality volume within dry or wet cells formed by check dams or other means. 80% 81 G 34 38 F 84 ⁻³ 31 G 51 71 P
Open Vegetated open channels that are designed to capture and real the full water Channels** quality volume within dry or wet cells formed by check dams or other means. 80% 81 G 34 38 F 84 ³ 31 G 51 71 P
Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Object is formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain water within dry cells formed by check dams or other Open vegetated drainage channel or depression designed to detain dams or depression
detain water within dry cells formed by check dams or other
detain water within dry cells formed by check dams or other
Income Description of standard
means. Promotes nitration of stormwater runoir into the soli
Dry Sware media. Permeable soil layer. 93 83 70 92 90 70 86
Open vegetated drainage channel or depression designed to
retain water or intercept groundwater for water guality treatment
in wet cell formed by check dams or other means. Creates a
Wet Swale ³ linear series of wetland cells. Wetland plants utilized. 74 28 -31 40 31 11 33
Grassed
channel (also
vegetated
Other channels, Grassed channels that collect and convey runoff usually to a
Vegetated grassed swales, basin or another BMP. Designed to treat shallow flows. Designed
Systems vegetated to filter stormwater runoff and meet velocity targets for the water
(biofilters) swales) ³ guality design storm and the 2-year storm event. $68 \ 60 \ 29 \ 20 \ 40 \ n/a \ 10 \ -25 \ 42 \ 70 \ 45 \ 60$

	-		1													Nitrate &	Metals	T								
			1	TSS										Nitrite		(Cd, Cu,								Organic	Hydro-	
BMPS	DESCRIPTION		1	TS	S			TF	Р		Sol P		T	N		Nitrogen	Pb & Zn)	Cu	Pb		Zn	Pa	thogens ²	Bacteria 9	Carbon 10	carbons
Other		Grass or other vegetation planted within uniformly graded areas	1																							
Vegetated		which accepts sheet flow runoff from adjacent surfaces such as	1																							
Systems		parking lots, highways and rooftops. Slows runoff velocity and	1																							
(biofilters)	Vegetated Filter	filters out sediments and other pollutants through filtration and	1			60-																				
continued	Strips	infiltration. Used in combination with riparian/wetland buffer to	1		65	80			40	30				40	30				45			60				
	Vegetated		1																							
	Buffers		1																							
	(grassed and		1																							
	treed) I.e.	Native or planted vegetation along edges of sensitive	1																							
	Wetland and	environmental resources which slows runoff velocity and filters	1			53-			1	53-					35-											
	Riparian buffers	out sediment and pollutants. Controls erosion of banks.	1			70				70					65											
Other	Porous	permeable layer of pavement or other stabilized permeable	1																							
Infiltration	pavement	surface (I.e. porous asphalt, porous concrete, modular	1																							
Systems	systems 3	perforated concrete block, cobble pavers with porous joints or	1	95	90			65	65		10		83	85		n/a		n/a	100		99 1	00				
Dry Ponds ie																										
Detention			1																							
Basins, Dry			1																							
Extended			1																							
Detention			1																							
Ponds,			1																							
Extended			1																							
Detention	Basins designed	to temporarily detain runoff for some minimum time and releases	1																							
Basins/Ponds	shortly after stor	m event (usually within 24 hours) . Reduces peak flow rate of	1																							
6	stormwater disch	narges. Used for water quantity control only.	I	47	45	20		19	25	20	-6		25	30	25	3.	5	26 3	50		26	20				
			1																							
OII/Grit Separatora			1																							
Separators			1																							
(also called oll			1																							
and water			1																							
Separators) &			1																							
Uner			1																							
Structures			1																							
Structures			1																							
proprietary			ı														1	1								
evetome noted	0		, I															1								
below and	Specifically desig	gned, partied inlets, remove or segregate trash, debris and some	ı I															1								
proprietary	amount or sedim	ent and petroleum hydrocarbons from stormwater. Operate by	ı I															1								
overome ^{2,7}	principles of sed	internation for grit and phase separation for oil. Ivinimal flow	ı I	0	51			41	5		40			5		4-	,	22	15		17	5				
systems.	Stormcentors	Proprietany oil/grit separator uses a bypass chamber & treatment		-8	51		\vdash	-41	C		40		n/a	C		4		-22	15		17	3				
	(Trademark)	chamber to trap and retain pps pollutants	ı I	25				10			21		0/2			4		30			21					
		Consists of 3 have: forebay for sediment trapping separator	r	20			\vdash	19			21		n/a				, 	30	+		21					
	Grit Chambers /	section for oil separation and afterbay allows for some setting	ı														1	1								
	Water Quality	but generally stormwater is routed out to another RMD or storm	, I															1								
	Inlote	drain system	ı		35	30			5	10				20	10			1	15	30		5				
		Modified catch basin with the outlet nine 4' below the inlet nine	ł		55	50			J	10				20	10			+	13	30		5				
		Allows suspended solids to settle out and oil and grease to float	ı I															1								
	Deen Sumn	on surface of pool of water. Eventually oil and grease attach to	ı															1								
	Catch Basins	sediment. Must be cleaned out for it to be effective.	ı															1								

BMPS	DESCRIPTION	TSS		ТР			Sol P	TN			Nitrate & Nitrite Nitrogen	Metals (Cd, Cu, Pb & Zn)	Cu	Pb	Zn	Pathogens ²	Bacteria ⁹	Organic Carbon ¹⁰	Hydro- carbons	
Catch Basin Insert	Designed to be suspended from storm drain inlet structure. Treats only the designed flow rate, should have a high-flow bypass to prevent resuspension and																			
In-line storage in the storm drain network	Collection of stormwater runoff from parking lots and roadways; allows for percolation of runoff. Provides storage within storm drain system to detain flows.																			

Notes:

Practices noted in italics are noted as effective BMPs for addressing water quality by NYSDEC. Includes 5 categories of effective BMPS: stormwater wetlands, stormwater ponds, filtration systems, infiltration systems and open channels. NYSDEC noted BMPs as effective if met water quality goals: 80% TSS (suspended inorganic and inorganic material) reduction; 40% TP removal and a proven record of longevity in the field. G=good pollutant removal (>30% TN, >60% metals, >70%) F= fair (15-30% TN, 30-60% Footnate

 1 = Pollutant Removal Efficiencies from sources noted in color.

 2 Pathogens = Coliform, Streptococci, E. coli removal measured as by NYSDEC 2001.

³ = Data is based on fewer than 5 data points for the pollutant removals from the National Pollutant Removal Performance Database for Stormwater Treatment Practices 2nd Edtn.

⁴ = Assumed vertical sand filter is same as underground sand filter for National Pollutant Removal Database values.

5⁵ Infiltration Practices Group pollutant removal efficiencies according to National Pollutant Removal Database 2nd Edtn. based on median value for Infiltration Trench & Porous Pavement methods.

⁶ = Stormwater Dry Ponds group's median pollutant removal efficiency from National Pollutant Removal Performance Database incorporate efficiencies of Quality Control Pond & Dry Extended Detention Pond. Group median utilized for Dry Extended Pond pollutant removal efficiency.

⁷ = Pollutant removal efficiency noted for Oil Grit separators separate and distinct from Stormceptor (trademark) value from National Pollutant Removal Performance Database 2nd Edtn.

⁸ Assumed stormwater wetlands same as stormwater wet ponds for bacteria, organic carbon and hydrocarbon pollutant removal efficiency per National Pollutant Removal Performance Database 2nd Edtn.

⁹ = Bacteria data include fecal streptococci, enterococci, fecal coliform, E. coli and total coliform as per National Pollutant Removal Performance Database 2nd Edtn.

¹⁰ = Excludes carbon data includes BOD, COD and TOC removal data.

n/a indicates that the data is not available

** Pollutant removal values from National Pollutant Removal Performance Database for group do not necessarily reflect all stormwater treatments listed in the group and may incorporate additional treatment types not included in

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