

Evaluation Criteria for Wastewater Treatment Unit Processes (Dataset)

These qualitative evaluation criteria are reported in (Adewumi 2011). In addition, several expert workshops have been conducted to fill the missing information and by using additional references.

Name	Recovery [%]	Reliability	Ease to upgrade	Adaptability to varying	Adaptability to varying	Ease of O & M	Ease of construction	Ease of demonstratio	Power demand	Chemical demand	Odor generation	Impact on ground water	Land requirement	Cost of treatment	Waste (sludge production)	Useful life [years]
Bar screen	100	3	1	3	3	3	3	3	1	0	3	0	1	1	2	30
Coarse screen	100	3	1	1	1	1	1	3	1	0	2	0	1	1	2	30
Grit Chamber	100	3	1	3	2	1	1	3	1	0	3	0	1	1	2	30
Equalization Basin	100	3	1	3	3	3	3	2	1	0	2	0	2	1	1	30
Sedimentation without coagulant	99	3	1	2	1	2	2	3	1	0	2	0	3	1	1	30
Sedimentation with coagulant	99	2	1	2	3	1	2	3	3	2	2	0	2	2	2	30
Anaerobic stabilization ponds	100	1	1	2	2	3	3	2	1	0	3	0	3	1	1	15

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Activated sludge	99	3	3	3	3	2	2	2	3	1	1	0	2	2	3	30
Low Loaded Activated Sludge w/o de-N + Sec Sedim.	99	3	3	3	3	2	2	2	3	1	1	0	2	2	3	30
Low Loaded Activated Sludge w de-N + sec. Sedim.	99	3	3	3	3	2	2	2	3	1	1	0	2	2	3	30
High Loaded Activated Sludge + Sec. Sedim.	99	3	3	3	3	2	2	2	3	1	1	0	2	2	3	30
Extended aeration	99	3	3	3	3	2	2	2	3	1	1	0	2	2	3	30
Trickling filter with secondary sedimentation	99	2	2	2	2	2	2	2	2	1	2	0	3	2	3	30

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Rotating biological contactor (RBC)	99	3	3	2	3	2	2	2	3	0	1	0	2	1	3	30
Stabilization ponds: Aerobic	99	1	1	2	2	3	3	2	1	0	3	0	3	1	1	30
Stabilization ponds: Facultative	99	1	1	2	2	3	3	2	1	0	3	0	3	1	1	30
Membrane bioreactor (MBR)	99	3	3	2	3	1	1	2	3	1.50	2	1	1	3	2	30
Constructed wetland	100	2	1	2	2	3	3	2	0	0	1	0	3	2	1	30
Enhanced biological phosphorus removal (EBPR)	100	2	3	2	2	3	3	1	1	0	2	0	3	2	2	30
P-	100	3	3	3	3	3	3	3	1	2	0	0	1	1	2	30

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Precipitation																
Denitrification	100	2	3	2	2	3	3	2	1	0	1	0	2	2	1	30
Dual media filter	100	3	3	2	2	1	2	3	2	1	0	0	2	2	1	20
Microfiltration	90	3	3	2	2	1	2	3	3	1	0	0	1	3	1	20
Ultrafiltration	85	3	3	2	2	1	2	3	3	1	0	0	1	3	1	20
Nanofiltration	83	3	3	2	2	1	2	1	3	1	0	0	1	3	1	20
Reverse osmosis	80	3	3	2	2	1	2	3	3	1	0	0	1	3	0	20
Activated Carbon	100	3	1	1	1	1	1	3	3	1	2	0	1	2	1	20
Ion exchange	90	1	2	1	1	1	2	2	3	3	0	1	1	2	3	30
Advanced oxidation process	100	2	2	3	2	2	3	3	3	3	0	0	1	3	1	30
Soil-aquifer treatment (SAT)	100	3	2	3	2	3	3	3	1	0	1	2	3	1	0	40

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Maturation pond	100	2	1	2	2	3	3	1	1	0	1	0	3	1	1	15
Flocculation	100	3	3	2	2	3	3	3	2	3	0	0	1	1	1	30
Electrodialysis	100	2	2	1	2	2	3	2	3	3	0	0	1	3	0	30
Ozonation	100	3	3	3	3	1	2	2	3	0	0	0	1	3	1	15
Chlorine gas	100	3	2	3	3	2	1	2	1	3	0	1	1	3	1	15
Chlorine dioxide	100	3	2	3	3	2	1	2	1	2	1	1	1	3	1	15
Ultraviolet disinfection	100	3	2	2	1	1	1	2	3	0	0	0	1	3	1	15

References

Adewumi, James Rotimi. 2011. "A Decision Support System for Assessing the Feasibility of Implementing Wastewater Reuse in South Africa."