DA-SERIES PERFORMANCE

STANDARD 40	6 Months
CBOD	4 mg/L
TSS	7 mg/L

STANDARD 245	6 Months
CBOD	4 mg/L
TSS	7 mg/L
TOTAL NITROGEN	19 mg/L (54.1% reduction)
FECAL COLIFORM	266 colonies / 100 mL without UV. / 7 colonies / 100 mL with UV.
E. COLI	2 MPN/100 mg/L
TURBIDITY	2.5 NTU
PH	6.81 SU

STANDARD 350	6 Months
CBOD	4 mg/L
TSS	7 mg/L
TOTAL NITROGEN	19 mg/L (54.1% reduction)
FECAL COLIFORM	266 colonies / 100 mL without UV. / 7 colonies / 100 mL with UV.
E. COLI	2 MPN/100 mg/L with UV
TURBIDITY	2.5 NTU
PH	6.81 SU

Clearstream Systems provides a two-year warranty on its equipment, without hidden conditions. We are confident of the durability and quality of our systems, so our warranty is simple. If the equipment is defective, we will either replace it with new components or repair the existing componet at no charge.

GCT

Clearstream Wastewater Treatment Systems have been tested by GCT to meet and exceed the requirements of the NSF/ANSI Standard 40, 245, and 350 evaluation developed by NSF International and the Council of Public Health Consultants. Our DA-Series Systems meet NSF/ANSI Standard 245 for denitrification and Standard 350 for wastewater reuse.

CLEARSTREAM®
WASTEWATER SYSTEMS, INC.

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CLEARSTREAM®
WASTEWATER SYSTEMS, INC.

DA-SERIES

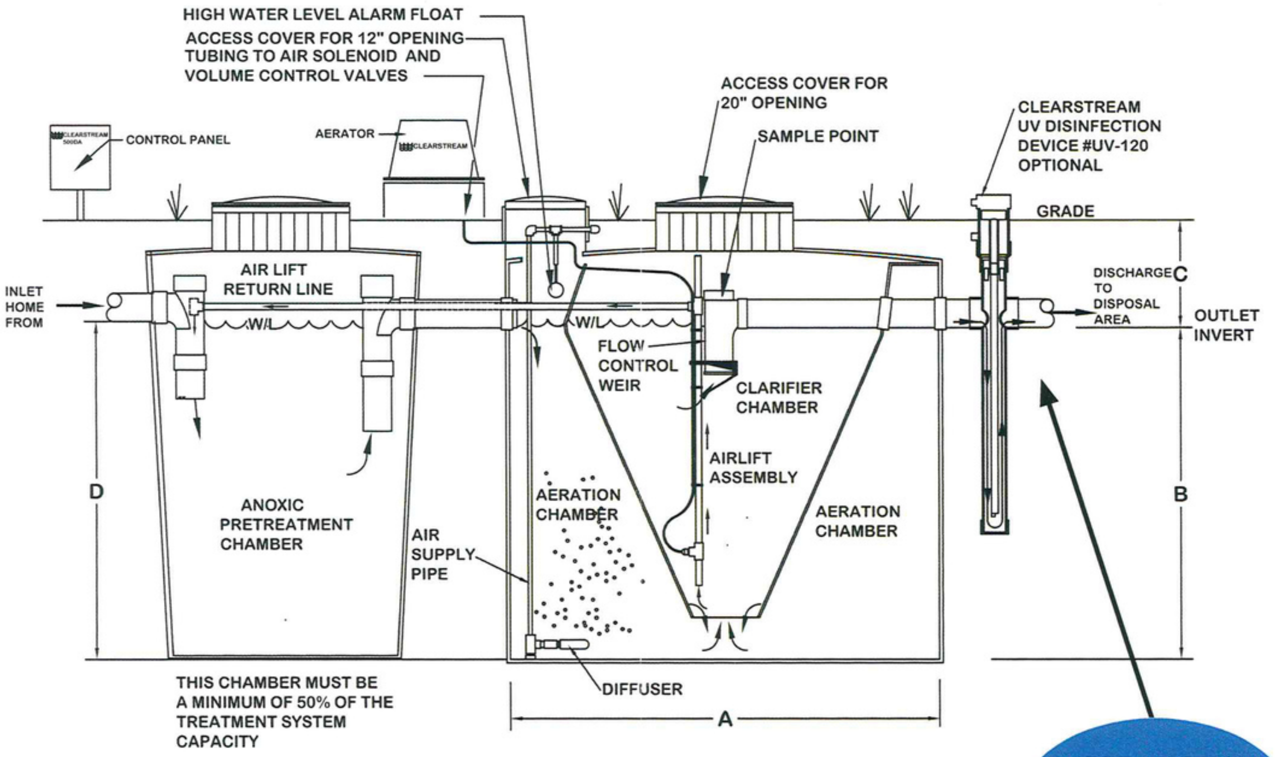
DENITRIFICATION & REUSE

GCT

CLASS 1
NSF/ANSI
40 and 245

CLEARSTREAM DA-SERIES

for Nitrogen Reduction & Reuse



UV Required for Wastewater 350 Reuse only

DIMENSIONAL TABLE:

MODEL	A	B	C	D
500DA	63"	63"	19"	65"
600DA	76"	55"	19"	57"
750DA	76"	65"	19"	67"
1000DA	76"	89"	19"	91"
1500DA	96"	82"	19"	84"

CONCRETE AND FIBERGLASS MODELS AVAILABLE FROM 500 GPD to 1500 GPD

US Patent
US 7,178,677 B1
US 7,513,994 B2
US RE39,203 E
US 7,294,261 B2
US 6,358,411 B1
US D444,535 S
US D445,869 S
US D438,932 S
Other Patents Pending

The Process of the Clearstream DA-Series

The Clearstream DA-Series system is comprised of three (3) treatment compartments. First, an anoxic pretreatment chamber; second, an aeration chamber; and last, a clarification (settling) chamber. An optional disinfection device is also available on the outlet from the clarifier to meet NSF/ANSI 350 standard for reuse. Wastewater (sewage) from a residence or small commercial facility enters the anoxic pretreatment chamber, where solids and non-biodegradable materials are retained (see diagram on left). The flow from the pretreatment chamber enters the aeration chamber by gravity. Using a fine bubble air diffuser, compressed air is injected near the bottom of the aeration chamber. The fine bubbles create mixing and a dissolved oxygen level for the aerobic bacteria. The organics and nutrients in this chamber mix with the aerobic bacteria populations, causing decomposition of the organic and ammonia compounds. The nitrifying bacteria in the aeration chamber converts ammonia into nitrates and nitrites.

Biologically treated wastewater from the aeration chamber then enters thru the bottom of the conical shaped clarifier by gravity. Solids in the mixed liquor will settle by gravity and descend thru the bottom opening of the cone back into the aeration chamber. A clear liquid layer zone of several feet will form in the top of the clarifier. This clarified effluent is then decanted thru the surge control weir and discharged thru a 4" outlet pipe for disposal. An airlift pump is located in the clarifier chamber to return a portion of the flow back into the anoxic pretreatment chamber. In the resulting denitrification process, aerobic bacteria in the recycled effluent attaches to the oxygen molecules in the nitrates and nitrites. This denitrification process releases nitrogen gas into the atmosphere. The denitrified liquid then recycles through the entire treatment process reducing the total nitrogen loading content in the effluent. The entire process described in the above paragraphs is proprietary to Clearstream Wastewater Treatments Systems, Inc.

As a result of this process, a reduction in fecal coliform has been obtained without disinfection devices. Clearstream also offers disinfection devices to achieve desired levels in the effluent, as required by regulatory authorities.