



State of Delaware
Department of Natural Resources & Environmental Control
Division of Water Resources
Ground Water Discharges Section

Innovative and Alternative System Approval

ISSUED TO: Cromaglass Corporation
Wastewater Treatment Systems
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FROM: Hilary Moore – Environmental Engineer
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FOR: CromaglassCA-5, CA5D, CA-12, CA-12D, CA-15, CA 15-D, CA-30,
CA-30D, CA-50, CA-50D, CA-60, CA-100, CA-100D, CA-120, CA-
120D, CA-150 and CA-150 D

APPROVAL DATE: July 31, 2006

In accordance with the Regulations Governing the Design, Installation, and Operation of On-Site Wastewater Treatment and Disposal Systems (Regulations), an application dated July 11, 2006, has been submitted Cromaglass Corporation, for approval of the Cromaglass treatment systems as Innovative & Alternative On-Site Wastewater Treatment Units.

Based on the review of the application, the Department hereby grants approval of the use of the Cromaglass treatment systems as Innovative & Alternative On-Site Wastewater Treatment Units subject to the conditions, limitations, and requirements set forth herein:

1. Product Description

The Cromaglass advanced treatment unit is a Sequencing Batch Reactor that stabilizes wastewater and reduces organics through a five stage process that occurs in one tank: screening/pre-aeration; aerobic/aeration; anoxic/denitrification; settling; and discharge.

Raw wastewater enters a compartment in the plant that retains large solid particles but also allows liquid and small particles to pass through into the aeration section of the main tank. Aerated liquid flow from the plant aerating pump provides agitation and solids breakdown under water.

The aeration section contains an aerating pump which also mixes liquid inflow and activated sludge that is maintained in the main tank of the plant.

At designated time periods, a batch of fluid is transferred from the main tank aeration section into the contact clarifier section. This section is isolated from the incoming wastewater. After a settling period, the clear supernatant is discharged from the plant as treatment effluent. At this point the settled solids (sludge) are returned to the aeration chamber on a predetermined time cycle. This batch processing will continued until all wastewater influent has been treated and discharged. The plant than reaches a standby condition and the batch processing stops.

The various models have the treatment capacities shown in the following table:

Model	Capacity (gallons per day - gpd)
CA-5	500
CA-5D	340
CA-12	1200
CA-12D	800
CA-15	1500
CA-15D	1040
CA-30	3000
CA-30D	2400
CA-50	5000
CA-50D	3750
CA-60	6000
CA-60D	3750
CA-100	10000
CA-100D	6000
CA-120	12000
CA-120D	6000

CA-150	15000
CA-150D	7500

**** D denoted a nitrify/denitrify unit.**

2. Claim

Approval is based on information submitted by the Manufacturer indicating the specified models will routinely provide effluent quality not exceeding 30 mg/l of BOD₅, and 30 mg/l of TSS. Those denitrifying units provide and effluent quality not exceeding 10 mg/l of Total Nitrogen (TN) assuming influent loading does not exceed the treatment capabilities of the units.

3. Use and Design Criteria

- a. The Cromaglass advanced treatment units may be installed for new and replacement systems with conventional and innovative and/or alternative disposal systems.
- b. An on-site wastewater treatment and disposal system permit application incorporating a Cromaglass unit shall be designed in accordance with the Regulations, and manufacturer's specifications. The design shall be completed by a DNREC Class C Design Engineer
- c. The designer must assure that the unit has above grade access. The design also must ensure that the control panel and blower are accessible.
- d. The Cromaglass units shall not be installed within areas subject to traffic loads unless specially designed on a case by case basis in accordance with the Regulations.
- e. The manufacturer is responsible for providing the Department a list of all local distributors and their associated contact information. This list must be kept current and shall be submitted to the Department on a yearly basis.

4. Installation Procedures

- a. The Cromaglass unit shall be installed by a DNREC Class E System Contractor under the supervision of a manufacturer's representative, or by a DNREC Class E System Contractor who has been certified for unit installation. Proof of certification shall be provided in writing to the Department.
- b. Start up of the system and initial operational checks shall be conducted by the Class E System Contractor (trained by the manufacturer), Design Engineer, and a Ground Water Discharges Section (Large System Branch) representative. If the Class E System Contractor is not certified, a manufacturer's representative shall perform the operational checks of the

system at start up. If the manufacturer's representative can not be on site at the time of start up, they must provide final start up approval to the Department in writing.

5. Operation and Maintenance

- a. The Cromaglass unit shall be operated and maintained in accordance with the manufacturer's specifications.
- b. The manufacturer or manufacturer's representative shall comply with all Department mandated requirements as specified in permit conditions. This shall include operation and maintenance requirements.

6. Sampling and Approval

The Department reserves the right to sample any unit at any time.

7. General Conditions

- a. Use of the system for wastes other than residential shall be on a case by case basis.
- b. In the event that the product fails to perform as claimed by the applicant, and it is found that the system is installed and working as designed, and there is no toxicity in the waste; the use of the units for new installations shall cease. Use of the units shall not resume until such time the applicant and the Department have reached an acceptable agreement for resolving the situations.
- c. Any changes that deviate from the specifications as submitted with this approval shall be approved by the Department prior to use.