NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD

ANAEROBIC DIGESTER
(No.)

CODE 366

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NRCS CPS ANAEROBIC DIGESTERS 366

DEFINITION

A component of a waste management system that provides biological treatment in the absence of oxygen.
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PURPOSE

For the treatment of manure and other byproducts of animal agricultural operations for one or more of the following reasons to:

- capture biogas for energy production
- manage odors
- reduce the net effect of greenhouse gas emissions
- reduce pathogens
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CONDITIONS WHERE PRACTICE APPLIES

This practice applies where:

- Biogas production and capture are components of a planned animal waste and byproduct(s) management system.
- Sufficient and suitable organic feedstocks are readily available.
- Existing facilities can be modified to the requirements of this standard or for new construction.
- The operator has the interest and skills to monitor and maintain processes or contracts with a consultant to provide these services.
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General Criteria

*Feedstock Requirements*

• Deal with extraneous material
• Exclude excess water
• Food or other waste as designed
• Comply with State and Local regulations
General Criteria

Safety

- Fences / Warning Signs
- Fire protection and leak detection
- Flare / 90’ from source / 10’ high / electrically grounded
- Flame trap between flare and source
- Marked gas lines above and below ground
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**Mesophilic Plug Flow:**
11% to 14% solids
20 day minimum retention time
Configured to assure plug flow

**Mesophilic Complete Mix:**
< 11% solids
17 day minimum retention time
Continuous Mix
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Ambient Covered Lagoon
Waste Treatment Lagoon 359
Waste Storage Facility 313
Waste Facility Cover 367
(Roofs and Covers 367)

May exclude rainfall
Min. 8’ deep over 50% of the area
Figure 1. Covered lagoons - maximum loading rate (lb VS/1,000 ft³/day).
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Ambient Covered Lagoon

Figure 2. Covered lagoons - minimum hydraulic retention times (MINHRT) in days.
Figure 3. Covered lagoons - locations suitable for biogas to energy conversion generally fall below the 40th parallel.
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Alternative Design

Fixed Film / Induced Blanket / Thermophilic

Design based on documented successful implementations

Approved variances
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Gas collection, transfer, and control systems
Gas utilization systems
Monitoring
Waste Storage
Considerations
Plans and Specifications
Operation and Maintenance
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