



State of Oregon  
Department of  
Environmental  
Quality

## Internal Management Directive

Title:	Conditions for Solid Waste Permit Exemption for On-Farm Anaerobic Digesters under an ODA Issued Confined Animal Feeding Operation Permit	FORM C
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Approval:	Wendy Wilson	

### Scope:

This Directive is intended to clarify the conditions under which DEQ may determine that a dairy or other on-farm anaerobic digestion (AD) facility operating pursuant to a Confined Animal Feeding Operation (CAFO) National Pollutant Discharge Elimination System (NPDES) or Water Pollution Control Facilities (WPCF) permit issued under ORS 468B.050 is exempt from solid waste permitting requirements under OAR 340-093-0050(3)(b). This Directive also identifies elements for inclusion in the farm's CAFO permit.

### Purpose/Need:

Several AD facilities are already managing manure and other farm-generated wastes on Oregon farms and dairies under CAFO NPDES and WPCF permits issued by Oregon Department of Agriculture (ODA). DEQ anticipates more AD facilities over the next several years in response to federal and state incentives designed to increase renewable power generation and reduce greenhouse gas emissions. To respond, solid waste permitting staff need clear guidelines for determining whether an on-farm AD facility operating under an ODA-issued CAFO permit is exempt from solid waste permit requirements under OAR 340-093-0050(3)(b). Manures and other farm-generated wastes are *solid wastes*, and while they have not traditionally been regulated by DEQ, an AD facility designed to manage these wastes is subject to solid waste disposal site permit requirements unless exempted by rule.

Currently, AD facilities operating at Oregon farms/dairies are managing only farm-generated wastes. DEQ, in consultation with ODA staff, has determined these facilities are exempt from solid waste disposal permit requirements under OAR 340-093-0050(3)(b), if:

- 1) The AD units are considered to be a normal farm use intended primarily for manure management;
- 2) The farm's manure management system is regulated by ODA under a CAFO permit,
- 3) No other solid waste is imported to the farm for inclusion in the AD units, and,
- 4) ODA has required updating of the farm's existing CAFO-required, Animal Waste Management Plan (AWMP), to include an *Anaerobic Digester Chapter* that describes the design and operation of the AD facility.

Operators of existing and proposed farm AD units are considering bringing in solid wastes from other farms or sources to compliment the digestion of manures and other farm-generated wastes in their AD facilities. Importing other solid wastes could pose potential public health and nuisance problems that the CAFO permit would not be able to address because it is limited to regulating ground and surface water quality. This directive will help DEQ staff evaluate whether an on-farm digester, using farm-generated or imported non-farm wastes, needs a DEQ solid waste disposal site permit.

Legal Authority:

ORS 459 establishes DEQ as the primary state regulatory agency responsible for solid waste management, including the agency responsible for the establishment and adoption of rules governing solid waste use and disposal.

OAR 340-093-0050(3)(b) exempts a facility operated pursuant to a Water Quality permit issued under ORS 468B.050 from the requirements to obtain a solid waste disposal site permit if all applicable solid waste management requirements in OAR 340 Divisions 93 – 97 are met.

**340-093-0050****Permit Required**

*(3) Persons owning or controlling the following classes of disposal sites are specifically exempted from the above requirements to obtain a permit under OAR chapter 340, divisions 93 through 97, but must comply with all other provisions of OAR chapter 340, divisions 93 through 97 and other applicable laws, rules, and regulations regarding solid waste disposal:*

*(b) Disposal sites, facilities or disposal operations operated pursuant to a permit issued under ORS 468B.050 if all applicable requirements in OAR chapter 340, divisions 93 through 97 have been met [emphasis added];*

ORS 468B.050 authorizes ODA and DEQ to issue permits to CAFOs. The 2003 Oregon Legislature directed ODA to take the lead in issuing CAFO permits with DEQ assistance.

ORS 468B.215(3), limits CAFO permit requirements to those conditions necessary to ensure that wastes are disposed of in a manner that does not cause pollution of the surface and ground waters of the state.

Discussion:

Anaerobic digestion is commonly used in Europe for animal waste management and is the most commonly employed conversion technology (CT) in the world. Conversion technologies convert solid wastes to useful products, fuel or electricity. On-farm, AD is primarily used to convert dairy manure to methane gas for electricity production. AD stands out among CTs as the technology that has a track record of successful commercial operation all around the world, particularly in Europe. The technology is well developed and commercial operations are becoming standardized in Europe.

Research and commercial-scale experience have shown that the addition of relatively small amounts of other "higher energy" solid waste feedstocks to dairy manure can: 1) enhance micronutrient availability, 2) contribute to biological stability and 3) substantially increase methane production. Some of the "higher energy" solid wastes proposed for incorporation into manure digesters include: 1) grass straw; 2) fats, oils and greases (FOGs); 3) glycerin; 4) food processing residue; 5) municipal food waste; 6) livestock mortality; 7) butcher waste; and, 8) fish processing waste.

CAFO NPDES permits, including individual permits and the NPDES General Permit #01-2009, require facilities to develop and maintain current Animal Waste Management Plans (AWMP). An AWMP consists of information about manure production, storage, and use and is applicable to a number of livestock species including dairy cows, horses, sheep, chickens and others. The AWMP describes all management activities for manure, including processing and use on-farm, and transport off-site for use or disposal. While Water Pollution Control Facility (WPCF) permits are no longer routinely issued, any existing or future WPCF permits would contain requirements for animal waste management.

ODA considers anaerobic digesters to be an accepted form of farm waste management. Farm AD facilities, designed to process manure, become part of the AWMP when described in an *Anaerobic Digester Chapter*. Anaerobic Digester Chapters describe how site design, construction and facility

operation is protective of water quality, including storage and management of manure and other solid wastes.

Community manure/waste AD units are becoming an efficient method to manage wastes from two or more farms. Community manure digesters are operating on two different dairy farms in Washington state, while one is currently under construction in Tillamook County, Oregon. Manures/wastes are transported (trucked or pumped through pipes) to a host farm which operates an AD facility for management of farm wastes. The AD unit is regulated under the host farm's CAFO permit. Wastes from participating farms are regulated under their own CAFO permits.

Directive:

DEQ, in consultation with ODA Staff, may determine that an on-farm AD facility designed to manage manure or other farm generated wastes for farm use is exempt from solid waste permitting requirements under OAR 340-093-0050(3)(b) if the following conditions are met:

- (a) The facility uses as feedstock only manure and other farm-generated wastes and other non-farm solid wastes imported from off-farm to compliment digestion of farm-generated wastes under the conditions described below.
- (b) The farm operation is in compliance with an ODA-issued CAFO permit, as determined by ODA CAFO staff.
- (c) The AD facility is designed and operated for farm use and not as a commercial operation for the management of non-farm solid waste; in other words it is designed and operated for management of farm-generated manures/wastes.
- (d) If non-farm solid wastes are imported for use in the AD unit (FOG, food waste, butcher waste, etc.), the amount of non-farm wastes imported is limited to the amount needed to optimize digester operations for the farm use.
- (e) If farm manures/wastes are imported from other farms for use in a "community" AD unit, hosted on a farm with a CAFO permit, the amount of off-farm, farm wastes is not limited; however, the AD facility must be operated as a farm use to benefit manure/waste management of each participating farm. Each exporting farm must submit to ODA for approval, a description of the transport and management of its wastes in an updated AWMP.
- (f) An *Anaerobic Digester Chapter* of the CAFO permit's AWMP, describing construction and operation of the digester unit, must be approved by ODA.
- (g) The *Anaerobic Digester Chapter* of the AWMP must describe, to ODA and DEQ's satisfaction, how solid wastes are stored and managed in a manner that is protective of groundwater and surface water quality:
- (h) ODA and DEQ staff must be satisfied that proposed design and operations plans describe a facility that will be protective of groundwater quality, surface water quality and the following solid waste management, public health concerns: 1) vector production and sustenance conditions and 2) conditions for transmission of diseases to man or animals.
- (i) An ODA condition must be placed on the approval of the *Anaerobic Digester Chapter* of the AWMP that indicates the digester is allowed to operate without a solid waste disposal site permit so long as solid waste/ public health issues do not arise. This condition would also notify permittees that if public health issues cannot be resolved to ODA or DEQ's satisfaction, the CAFO operator would need to stop using the non-farm wastes in the AD operation or obtain a DEQ solid waste permit for their digester facility.
- (j) The AD facility submits an annual material recovery survey report to DEQ for any reportable non-farm generated solid wastes utilized in digestion.

### Permit Exemption Process

Review of Anaerobic Digester Chapter - Farms proposing to construct AD facilities will submit to ODA for review and approval, an amended AWMP, including an *Anaerobic Digester Chapter* that describes site design and operational plans. DEQ and ODA staff will jointly review AD facility proposals to ensure that an AD facility: a) is for farm use; and, b) design and operation of AD units will be protective of groundwater and surface water quality and the solid waste management/ public health concerns identified above. The level of DEQ review will vary, depending on the amount of ODA staff experience with AD unit proposals. DEQ solid waste staff should consult with their manager and the lead DEQ solid waste person to gauge the appropriate level of review.

### Protection of Groundwater and Surface Water Quality and Public Health

ODA staff will contact the regional DEQ solid waste program contact to discuss proposed AD facilities and determine review procedures. ODA staff will review the amended AWMP for water quality protection issues as well as facility design and management practices to prevent public health issues. DEQ staff will confer with ODA staff to review the following solid waste management process points for prevention of public health issues: delivery of solid wastes; solid waste storage; and transfer of materials around the site. Staff should be looking for design and best management practices for the prevention of: 1) vector production and sustenance conditions and 2) conditions for transmission of diseases to man or animals.

### Farm Use

DEQ and ODA staff should consider the proposed amount of imported, non-farm generated waste to be used to determine whether a) the AD unit is primarily for farm use in managing farm wastes and b) the non-farm solid waste imported from off-farm is necessary to optimize digester operation. AD units that are operated for commercial purposes, other than the allowed farm use, will be subject to DEQ solid waste disposal site permit requirements. As reference, Washington Dept. of Ecology allows a permit exemption for importation of less than 30% by weight of non-farm solid wastes. DEQ and ODA staff will work closely together in discussing each proposal, reviewing facility specific information and documenting decisions on whether a facility is exempt from solid waste disposal permit requirements. The agreed upon amount of non-farm feedstocks should be specified in the ODA-approved *Anaerobic Digestion Chapter* of the AWMP. If a farm proposes increases in the amount of non-farm feedstocks, ODA & DEQ staff should discuss each proposal and agree upon the acceptable amount. If the facility proposes to accept amounts of non-farm generated solid waste in excess of what is necessary to optimize digestion of farm-generated manures/wastes, DEQ and ODA staff will confer and a solid waste disposal site permit may be required if staff agree the proposed facility design is beyond normal animal waste management requirements.

### Community Farm Manure/Waste Digesters

DEQ and ODA staff should confer to determine if a proposed AD facility is primarily for farm use. If farm generated wastes are the only feedstocks, then the facility likely qualifies for the farm use designation. If non-farm wastes are to be imported, DEQ and ODA staff should consider the *Farm Use* section language above in determining whether the facility is exempt from permit requirements.

### Malodors Generated by AD Operations

DEQ requires that odors generated at solid waste disposal sites be reasonably controlled and minimized. The presence of malodor at an AD facility can be an indication of system upset conditions that need to be addressed. ODA staff should work with the farm to correct the situation and mitigate odor problems.

### Conditional Approval of Anaerobic Digester Chapter of AWMP

Once technical staff has reviewed all information and is satisfied that a proposed AD facility: a) is for farm use; and, b) will operate in a manner that is protective of groundwater quality, surface water quality and the public health issues identified above, they may determine the facility is exempt from the requirement to obtain a solid waste disposal site. In exempting a facility from the requirement to obtain

a DEQ solid waste disposal site permit, DEQ staff will briefly document their review and exemption determination. The document can be a memo or e-mail to ODA staff for inclusion in the CAFO files. ODA staff will issue a conditional approval of the amended AWMP. The following is an example of AWMP language for conditional approval: "DEQ or ODA staff may require a facility to cease using the non-farm generated solid waste material in the AD operation or obtain a Solid Waste Disposal Site permit from DEQ if human health, vector or air quality issues arising from the AD operations are not successfully mitigated by the CAFO permittee."

#### Unresolved Public Health Issues Resulting from AD Operations

ODA staff will be the primary contacts for the AD facility, once the amended AWMP has been approved. ODA staff will work with digester operators to implement Best Management Practices identified in the amended AWMPs to resolve any water quality, public health or nuisance issues. ODA staff may consult with DEQ staff to help resolve problems and to determine whether a DEQ permit may be required. If, after consultation by ODA and DEQ staff, it becomes apparent an operator will not or cannot resolve a public health issue, ODA or DEQ may require the operation to cease using the imported, non-farm solid waste feedstock in the AD or to obtain a DEQ permit to continue operation. If a solid waste permit is required, DEQ staff will contact the operator about permitting requirements.

#### Implementation:

This IMD will be effective immediately upon approval. Implementation of this directive will be carried out primarily by Regional DEQ solid waste permit staff in coordination with ODA staff. DEQ Headquarters staff will have a more limited role, including: 1) helping coordinate/conduct training of regional permit staff; and/or, 2) answering questions and directing inquiries to the appropriate regional staff contact.

#### Review Schedule:

The periodic review schedule will apply.

#### Contact Person:

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#### Disclaimer:

This directive is intended solely as guidance for DEQ employees. It does not constitute rulemaking by the Environmental Quality Commission and may not be relied upon to create an enforceable right or benefit, substantive or procedural, enforceable at law or in equity, by any person. DEQ may take action at variance with this policy.

