

CHAPTER 2

SUMMARY OF SCOPE AND CONTENT OF THE FINAL REGULATION

This chapter presents a summary of the rule for the concentrated aquatic animal production (CAAP) industry. The rule establishes effluent limitations guidelines (ELGs) and new source performance standards based on treatment technologies or operational and management measures for the control of pollutants. Section 2.1 summarizes and discusses the applicability of the National Pollutant Discharge Elimination System (NPDES) regulations, and Section 2.2 summarizes and discusses the applicability of the effluent limitations guidelines and standards for the CAAP industry.

2.1 NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)

The NPDES regulations define which aquatic animal production facilities are concentrated aquatic animal production facilities that are point sources subject to the NPDES permit program (see 40 CFR 122.24 and Appendix C to Part 122). A CAAP is either a facility that meets the criteria in 40 CFR Part 122 Appendix C or a facility that EPA or a state designated a CAAP on a case-by-case basis (40 CFR 122.24(b)). A hatchery, fish farm, or other facility is a CAAP facility if it contains, grows, or holds, aquatic animals in the following conditions (40 CFR Appendix C to Part 122):

The **coldwater** species category includes ponds, raceways, or other similar structures which discharge at least 30 days/year but does not include: facilities which produce less than 9,090 harvest weight kilograms (approximately 20,000 pounds) per year; and facilities which feed less than 2,272 kilograms (approximately 5,000 pounds) during the calendar month of maximum feeding. *Coldwater aquatic animals* include, but are not limited to, the Salmonidae family of fish; e.g., trout and salmon.

The **warmwater** category includes ponds, raceways, or other similar structures which discharge at least 30 days/year but does not include: closed ponds which discharge only during periods of excess runoff; or facilities which produce less than 45,454 harvest weight kilograms (approximately 100,000 pounds) per year. *Warmwater aquatic animals* include, but are not limited to, the Ameiuride, Centrarchidae, and Cyprinidae families of fish; e.g., respectively catfish, sunfish, and minnows.

EPA is not revising the NPDES regulation.

2.2 EFFLUENT LIMITATIONS GUIDELINES AND STANDARDS

The effluent limitations guidelines and standards regulations establish the Best Practicable Control Technology Currently Available (BPT), Best Control Technology for Conventional Pollutants (BCT), and Best Available Technology Economically Achievable (BAT) limitations, as well as New Source Performance Standards (NSPS). EPA is not establishing national pretreatment standards for this category, which contains very few indirect dischargers. The indirect dischargers discharge mainly TSS and BOD, which the POTWs are designed to treat and which consequently, do not pass through. In addition, nutrients discharged from CAAP facilities are in concentrations lower, in full flow discharges, and similar, in off-line settling basin discharges, to nutrient concentrations in human wastes discharged to POTWs. The options EPA considered do not directly treat nutrients, but some nutrient removal is achieved incidentally through the control of TSS. EPA concluded POTWs would achieve removals of TSS and associated nutrients equivalent to those achievable by the options considered for this rulemaking and therefore there would be no pass through of pollutant in amounts needing regulation. In the event of pass through that causes a violation of a POTW's NPDES limits, the POTW must develop local limits for its users to ensure compliance with its permit.

2.2.1 Regulatory Implementation of Part 451 Through the NPDES Permit Program and the National Pretreatment Program

Under Sections 301, 304, 306, and 307 of the Clean Water Act (CWA), EPA promulgates national effluent limitations guidelines and standards of performance for major industrial categories generally for three classes of pollutants: (1) conventional pollutants (i.e., TSS, oil and grease, BOD, fecal coliforms, and pH); (2) toxic pollutants (e.g., toxic metals such as chromium, lead, nickel, and zinc; toxic organic pollutants such as benzene, benzo-*a*-pyrene, phenol, and naphthalene); and (3) non-conventional pollutants (e.g., ammonia-N, formaldehyde, and phosphorus).

EPA considers development of six types of effluent limitations guidelines and standards for each major industrial category, as appropriate:

<u>Abbreviation</u>	<u>Effluent Limitation Guideline or Standard</u>
<u>Direct Dischargers</u>	
BPT	Best Practicable Control Technology Currently Available
BAT	Best Available Technology Economically Achievable
BCT	Best Control Technology for Conventional Pollutants
NSPS	New Source Performance Standards
<u>Indirect Dischargers</u>	
PSES	Pretreatment Standards for Existing Sources
PSNS	Pretreatment Standards for New Sources

The effluent limitations guidelines and NSPS apply to industrial facilities with direct discharges to navigable waters. Pretreatment standards apply to industrial facilities with wastewater discharges to POTWs. As noted above, EPA is not requiring categorized pretreatment standards for the CAAP industrial category.

2.2.1.1 NPDES Permit Program

Section 402 of the CWA establishes the NPDES permit program. The NPDES permit program is designed to limit the discharge of pollutants into navigable waters of the United States through a combination of various requirements, including technology-based and water quality-based effluent limitations. This regulation contains the technology-based effluent limitations guidelines and standards applicable to the CAAP industry to be used by permit writers to derive NPDES permit technology-based effluent limitations. Water quality-based effluent limitations are based on receiving water characteristics and ambient water quality standards, including designated water uses. They are derived independently from the technology-based effluent limitations set out in this regulation. The CWA requires that NPDES permits must contain, for a given discharge, the more stringent of the applicable technology-based or water quality-based effluent limitations for any given pollutant of concern.

Section 402(a)(1) of the CWA provides that in the absence of promulgated effluent limitations guidelines or standards, the Administrator, or his or her designee, may establish technology-based effluent limitations for specific dischargers on a case-by-case basis. Federal NPDES permit regulations provide that these limits may be established using “best professional judgment” (BPJ) taking into account any effluent limitations guidelines and standards and other relevant scientific, technical, and economic information, as well as the statutory technology-based standards of control.

Section 301 of the CWA requires that BAT effluent limitations for toxic pollutants are to have been achieved as expeditiously as possible, but not later than 3 years from the date of promulgation of such limitations and in no case later than March 31, 1989. (See § 301(b)(2).) Because the 40 CFR Part 451 regulations for the CAAP industry will be promulgated after March 31, 1989, NPDES permit effluent limitations based on the effluent limitations guidelines will need to be included in the next NPDES permit issued after promulgation of the regulation. The permits must require immediate compliance with the effluent limitations. If the permitting authority wishes to provide a compliance schedule, it must do so through an enforcement mechanism.

2.2.1.2 New Source Performance Standards

New sources will need to comply with the NSPS and limitations of the CAAP rule at the time such sources commence discharging CAAP process wastewater. Because the final rule was not promulgated within 120 days of the proposed rule, the Agency will consider a discharger to be a new source if construction of the source begins 30 days after the date of publication of the Rule in the *Federal Register*.

2.2.1.3 National Pretreatment Standards

The national pretreatment standards at 40 CFR Part 403 have three principal objectives: (1) to prevent the introduction of pollutants into POTWs that will interfere with POTW

operations, including use or disposal of municipal sludge; (2) to prevent the introduction of pollutants into POTWs which will pass through the treatment works or will otherwise be incompatible with the treatment works; and (3) to improve opportunities to recycle and reclaim municipal and industrial wastewaters and sludges.

The national pretreatment and categorical standards comprise a series of prohibited discharges to prevent the discharge of “any pollutant(s) which cause Pass Through or Interference.” (See 40 CFR 403.5(a)(1).) Local control authorities are required to implement the national pretreatment program including application of the federal categorical pretreatment standards to their industrial users that are subject to such categorical pretreatment standards, as well as any pretreatment standards derived locally (i.e., local limits) that are more restrictive than the federal standards. This regulation will not establish national categorical pretreatment standards (PSES and PSNS) applicable to CAAP facilities that are regulated by 40 CFR Part 451.

2.2.2 Applicability of the Rule

EPA has subcategorized the CAAP point source category based on production system type. See Chapter 5 for a discussion on subcategorization. The subcategories are listed in Table 2.2–1. The rule applies to facilities that annually produce at least 100,000 pounds of aquatic animals in the following subcategories: (1) flow-through and recirculating and (2) net pens. EPA did not promulgate regulations for closed pond systems because 1) most do not discharge 30 days or more and are not defined as CAAPs; 2) because of the minimal pollutant discharges; and 3) because the pond itself acts as an effective treatment system.

Table 2.2–1. Applicability of Final Rule to CAAP Subcategories

<i>System Type or Subcategory</i>	<i>Annual Production (lb)</i>	
	<i><100,000</i>	<i>≥100,000</i>
Closed Ponds	Not Applicable	Exempt
Flow-through and Recirculating (Subpart A)	Not Applicable	Subject to Sections: 451.3(a)–(d) 451.11(a)–(e) 451.12–14
Net pen (Subpart B)	Not Applicable	Subject to Sections: 451.3(a)–(d) 451.21(a)–(h) 451.22–24

2.2.3 Summary of Effluent Limitations Guidelines and Standards

The final regulatory option requires reporting of Investigational New Animal Drugs (INADs) and extralabel drug use. It also requires facilities to report failure in or damage to the structure of an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the United States. Facilities must develop

and maintain a BMP plan onsite describing how the permittee will achieve the final requirements.

2.2.3.1 General Reporting Requirements

EPA established general reporting requirements (found in 40 CFR 451.3) for the use of certain types of drugs.

The general reporting requirements apply to flow-through, recirculating, and net pen systems.

INADs and Extralabel Drug Use

The permittee will need to notify the permitting authority of the use in a CAAP facility (subject to this Part) of any INAD (i.e., a drug for which there is a valid exemption in effect under 512(j) of the Federal Food, Drug, and Cosmetic Act, 21.U.S.C. 360b(j)) and any extralabel drug use (i.e., when a drug is not used according to label requirements), where such use may lead to discharge to waters of the United States. Reporting is not required for an INAD or extralabel drug use when the drug is used for a different species or disease at or below the approved dose and involves similar conditions of use. For INADs:

- The permittee must provide a written report to the permitting authority of an INAD's impending use within 7 days of agreeing or signing up to participate in an INAD study. The written report must identify the INAD to be used, method of application, the dosage, and the disease or condition the INAD is intended to treat.

For INADs and extralabel drug use:

- The permittee must provide an oral report to the permitting authority as soon as possible, preferably in advance of use, but no later than 7 days after initiating use of the drug. The oral report must identify the drugs used, the method of application, and the reason for using the drug.
- The permittee must provide a written report to the permitting authority within 30 days after initiating use of the drug. The written report must identify the drug used and include: the reason for treatment, date(s) and time(s) of the addition (including duration); method of application; and the amount added.

Failure in or Damage to the Structure of an Aquatic Animal Containment System

The permittee needs to notify the permitting authority of any failure in, or damage to, the structure of an aquatic animal containment system resulting in an unanticipated material discharge of pollutants to waters of the United States. Any permittee must notify the permitting authority when there is a reportable failure.

- The permitting authority may specify in the permit what constitutes reportable damage and/or a material discharge of pollutants, based on a consideration of production system type, sensitivity of the receiving waters, and other relevant factors.

- The permittee must provide an oral report within 24 hours of discovery of any reportable failure or damage that results in a material discharge of pollutants, describing the cause of the failure or damage in the containment system and identifying materials that have been released to the environment as a result of the failure.
- The permittee must provide written report within 7 days of discovery of the failure or damage documenting the cause, the estimated time elapsed until the failure or damage was repaired, an estimate of the material released as a result of the failure or damage, and steps being taken to prevent a reoccurrence.
- In the event a spill of drugs, pesticides, or feed occurs that results in a discharge to waters of the U.S., the permittee must provide an oral report of the spill to the permitting authority within 24 hours of its occurrence and a written report within 7 days. The report must include the identity and quantity of the material spilled.

BMP Plan

EPA requires that all facilities subject to this Part develop and maintain a BMP plan describing how the permittee will achieve the final requirements. The permittee must certify in writing to the permitting authority that a BMP plan has been developed and make the plan available to the permitting authority upon request.

2.2.3.2 Narrative Requirements

For the final effluent guideline, EPA is establishing narrative effluent limitations for flow-through, recirculating, and net pen systems.

Flow-through and Recirculating Systems

BPT

EPA is establishing nationally applicable effluent limitations guidelines and standards for CAAP flow-through and recirculating facilities producing at least 100,000 pounds of aquatic animals per year.

EPA based the final limitation on operation requirements to address solids controls, materials storage, structural maintenance, record-keeping, and training. These practices are widely available among the existing flow-through and recirculating system facilities.

Solids Control

The final regulation includes narrative limitations requiring solids control measures and operational practices. To control the discharge of solids from flow-through and recirculating system facilities, EPA requires the facility to employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the U.S.

In order to minimize the discharge of accumulated solids from settling ponds and basins and production systems, facilities must identify and implement procedures for routine

cleaning of rearing units and offline settling basins, and procedures to minimize any discharge of accumulated solids during the inventorying, grading, and harvesting aquatic animals in the production system.

As part of the solids control requirements, facilities must remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States, except in cases where the permitting authority authorizes such discharge in order to benefit the aquatic environment. For example, federal, state, and tribal hatcheries raise fish for stocking or mitigation purposes. In some cases, these facilities have been approved to discharge fish carcasses along with the live fish that are being stocked. In these situations, the carcasses are serving as a source of nutrients and food to the fish being stocked in these waters.

Materials Storage

To address materials storage, facilities must ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of the United States. In the event that a spill of drugs, pesticides, or feed occurs that results in a discharge to waters of the United States, the owner or operator will provide an oral report of this to the permitting authority within 24 hours of its occurrence and a written report within 7 days. The report will include the identity of the material spilled and an estimated amount. Facilities must also implement procedures for properly containing, cleaning, and disposing of any spilled material. Many facilities may already have implemented practices that address these requirements.

Structural Maintenance

To address structural maintenance, EPA is requiring facilities to conduct routine inspections of the production system and the wastewater treatment system to identify and promptly repair any damage. EPA is not requiring any design specifications associated with the structural components of the CAAP facility; EPA is merely expecting facilities to identify practices that will ensure any existing structures are maintained in good working order. Facilities must also conduct regular maintenance of the production system and the wastewater treatment system to ensure that they are properly functioning. One of the areas of concern associated with this requirement is to minimize the occurrence of solids (especially large solids such as carcasses and leaves) from clogging screens that separate the raceway from the quiescent zone. These solids could prevent the flow of water through the screen causing water to instead flow over the screen and impair the passage of solids into the quiescent zone.

Record-keeping

EPA is requiring facilities to keep records for certain activities. Facilities must maintain records for aquatic animal rearing units documenting the feed amounts and estimates of the numbers and weight of the aquatic animals in order to calculate representative feed conversion ratios. Facilities must also keep records documenting the frequency of cleaning, inspections, maintenance, and repairs.

Training

EPA is requiring facilities to train relevant facility personnel in spill prevention. The training must include how to respond in the event of a spill and therefore ensures that proper clean-up and disposal of spilled material can be addressed. Facilities must also train staff on the proper operation and cleaning of production and wastewater treatment systems, including training in feeding procedures and equipment.

A summary of the BPT requirements for flow-through and recirculating systems is provided in Table 2.2–2 at the end of the chapter.

BAT

EPA is establishing BAT at a level equal to BPT for the flow-through and recirculating system subcategory. For this subcategory, EPA did not identify any *available* technologies that are economically achievable that would achieve more stringent effluent limitations than those considered for BPT. Because of the nature of the wastes generated from CAAP facilities, advanced treatment technologies or practices to remove additional solids (e.g., smaller particle sizes) in TSS that would be economically achievable on a national basis do not exist beyond those already considered.

BCT

EPA evaluated conventional pollutant control technologies applying its BCT cost test. EPA did not identify a more stringent technology for the control of conventional pollutants for BCT limitations that passes the BCT cost test. Consequently, EPA is not promulgating BCT limitations or standards based on a different technology from that used as the basis for BPT limitations and standards. For more details about the BCT cost reasonableness test and the BAT analysis, see the *Economic and Environmental Impact Analysis* (USEPA, 2004).

NSPS

After considering the technology options described in the proposed rule and Notice of Data Availability (NODA) and evaluating the factors specified in Section 306 of the CWA, EPA is promulgating standards of performance for new sources equal to BPT, BAT, and BCT. There are no more stringent technologies available for NSPS that would not represent a barrier to entry for new facilities. Because of the nature of the wastes generated in CAAP facilities, EPA has not identified advanced treatment technologies or practices to remove additional solids (e.g., smaller particle sizes) in TSS that would be affordable beyond those already considered.

EPA determined that NSPS equal to BAT will not present a barrier to entry. See Section IX of the Preamble for more discussion of barrier to entry analysis. The overall impacts from the effluent limitations guidelines on new sources would not be any more severe than those on existing sources. This is because the costs faced by new sources are generally the same as or lower than those faced by existing sources. It is generally less expensive to incorporate pollution control equipment into the design at a new facility than it is to retrofit the same pollution control equipment in an existing plant. At a new facility, no demolition is required and space constraints (which can add to retrofitting costs if specifically designed equipment must be ordered) may be less of an issue.

Net Pen Systems

BPT

EPA is establishing nationally applicable effluent limitations guidelines and standards for CAAP net pen facilities producing at least 100,000 pounds of aquatic animals per year except for net pen facilities rearing native species released after a growing period of no longer than 4 months to supplement commercial and sport fisheries.

Feed Monitoring

Facilities must minimize the accumulation of uneaten feed beneath pens through the use of active feed monitoring and management strategies. These strategies may include one or more of the following: use of real-time feed monitoring (including devices such as video cameras, digital scanning sonar, and upweller systems), monitoring of sediment quality beneath the pens, monitoring of benthic community quality beneath pens, capture of waste feed and feces, or adoption of other good husbandry practices subject to the permitting authority's approval. Real-time monitoring represents a widely used business practice that is employed by many of the salmonid net pen facilities to reduce feed costs. Net pen systems do not present the same opportunities for solids control as do flow-through or recirculating systems. Therefore, in EPA's view, feed monitoring including real-time monitoring and other practices is an important and cost reasonable practice to control solids discharges.

Facilities must employ efficient feed management strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the United States.

Waste Collection and Disposal

EPA is requiring facilities to collect, return to shore, and properly dispose of all feed bags, packaging materials, waste rope, and netting. EPA assumes net pen facilities have the equipment (e.g., trash receptacles) to store empty feed bags, packaging materials, waste rope, and netting until they can be transported for disposal.

Transport or Harvest Discharge

Facilities must minimize any discharge associated with the transport or harvesting of aquatic animals including blood, viscera, aquatic animal carcasses, or transport water containing blood. During stocking or harvesting of fish, some may die. The wastes and wastewater associated with the transport or harvest of fish have high BOD and nutrient concentrations and should be disposed of at a location where they may be properly treated.

Carcass Removal

Facilities must remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States. Discharge of dead fish represents an environmental concern because they may spread disease and attract predators, which could imperil the structural integrity of the containment system.

Materials Storage

EPA is requiring net pen facilities to ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of the United States. In the event that a spill of drugs, pesticides, or feed occurs that results in a discharge to waters of the United States, the owner or operator will provide an oral report of this to the permitting authority within 24 hours of its occurrence and a written report within 7 days. The report will include the identity of the material spilled and an estimated amount. Facilities must also implement procedures for properly containing, cleaning, and disposing of any spilled material.

Structural Maintenance

Facilities must inspect the production system on a routine basis in order to identify and promptly repair any damage. In addition, facilities must conduct regular maintenance of the production system to ensure that it is properly functioning. Net pens are vulnerable to damage from predator attack or accidents that result in the release of the contents of the nets, including fish and fish carcasses. EPA assumes facilities will conduct routine inspections of the nets to ensure they are not damaged and make repairs as soon as any damage is identified.

Record-keeping

Facilities must maintain records for each net pen documenting the feed amounts and estimates of the numbers and weight of aquatic animals in order to calculate representative feed conversion ratios. EPA is also requiring facilities to keep records of the net changes, inspection, and repairs.

Training

Net pen facilities must adequately train all relevant personnel in spill prevention and, in the event of a spill, how to respond to ensure the proper clean up and disposal of any spilled material. Facilities must also train staff on the proper operation and cleaning of the production systems, including training in feeding procedures and proper use of equipment.

All existing net pen facilities that are currently covered by NPDES permits are subject to permit requirements that meet the final regulatory option when the permit is reissued. However, there may be a small number of net pen facilities in Maine that may not have taken coverage under an NPDES permit (Goodwin, 2004). EPA does not have detailed results from these unpermitted facilities, but assumes they are employing operational measures similar to those in use at the permitted net pen facilities EPA has reviewed. Therefore, EPA concludes that the BPT limits are both technically available and cost reasonable. A summary of the BPT requirement alternatives for net pen systems is provided in Table 2.2–3 at the end of the chapter.

BAT

EPA is establishing BAT at a level equal to BPT for the net pen subcategory. For this subcategory, EPA did not identify any *available* technologies that are economically

achievable that would achieve more stringent effluent limitations than those considered for BPT. Because of the nature of the wastes generated from CAAP facilities, advanced treatment technologies or practices to remove additional solids that would be economically achievable on a national basis do not exist beyond those already considered.

BCT

EPA evaluated conventional pollutant control technologies applying its BCT cost test. EPA did not identify a more stringent technology for the control of conventional pollutants for BCT limitations that passes the BCT cost test. Consequently, EPA is not promulgating BCT limitations or standards based on a different technology from that used as the basis for BPT limitations and standards. For more details about the BCT and BAT economic analyses, see the *Economic and Environmental Impact Analysis* (USEPA, 2004)

NSPS

After considering the technology requirements described in the proposal and NODA and the factors specified in Section 306 of the CWA, EPA is promulgating standards of performance for new sources equal to BPT, BAT, and BCT. There are no more stringent best demonstrated technologies available. Because of the nature of the wastes generated and the production system used, EPA has not identified advanced treatment technologies or practices to require that would be affordable beyond those already considered.

Although siting is not addressed with the final standards, when establishing new net pen CAAP facilities the location is critical in predicting the potential impact the net pen will have on the environment. Net pens are usually situated in areas which have good water exchange through tidal fluctuations or currents. Good water exchange ensures good water quality for the animals in the nets, and it also minimizes the concentration of pollutants below the nets. EPA encourages facilities and permit authorities to give careful consideration to siting prior to establishing a new net pen facility.

EPA has concluded that NSPS equal to BAT does not present a barrier to entry. See Section IX of the Preamble for more discussion of barrier to entry analysis. The overall impacts from the effluent limitations guidelines on new source net pens is no more severe than those on existing net pens. The costs faced by new sources generally should be the same as or lower than those faced by existing sources. It is generally less expensive to incorporate pollution control equipment into the design at a new facility than it is to retrofit the same pollution control equipment in an existing facility.

Although EPA is not establishing standards of performance for new sources for small coldwater facilities (i.e., those producing between 20,000 and 100,000 pounds of aquatic animals per year), the facilities will be subject to existing NPDES regulations and permit limits developed using the permit writer's "best professional judgment" (BPJ). EPA, based on its analysis of existing data, determined that new facilities would produce 100,000 pounds of aquatic animals or more per year because of the expense of producing the aquatic animals. Generally, the species produced are considered of high value and are produced in such quantities to economically justify the production. For example, one net

pen typically holds 100,000 pounds of aquatic animals or more. In reviewing U.S. Department of Agriculture's (USDA's) Census of Aquaculture and EPA's detailed surveys, EPA has not identified any existing commercial net pen facilities producing fewer than 100,000 pounds of aquatic animals per year.

Offshore aquatic animal production is an area of potential future growth. As these types of facilities start to produce aquatic animals, they should meet the new source requirements established for net pens as well as NPDES permitting.

Table 2.2–2. Summary of Final Requirements for Flow-through and Recirculating Facilities

General Reporting Requirements		Reference
Drugs		451.3(a)
1) Reporting of intention to use INADs	<ul style="list-style-type: none"> • Provide the permitting authority with a written report, within 7 days of agreeing or signing up to participate in an INAD study • Identify the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat 	451.3(a)(1)
2) Oral reporting of INAD and extralabel drug use	<ul style="list-style-type: none"> • Provide an oral report to the permitting authority as soon as possible, preferably in advance of application, but no later than 7 days after initiating use of the drug • Identify drugs used, method of application, and the reason for adding that drug 	451.3(a)(2)
3) Written reporting of INAD and extralabel drug use	<ul style="list-style-type: none"> • Provide a written report to the permitting authority within 30 days after initiating use of the drug • Identify the drug used and include the reason for treatment, date(s) and times(s) of the addition (including duration), method of application, and the amount added 	451.3(a)(3)
Structural Integrity		451.3(b)
1) Specification of reportable damage and/or material discharge	<ul style="list-style-type: none"> • The permitting authority may specify in the permit what constitutes reportable damage and/or material discharge of pollutants, based on consideration of production system type, sensitivity of the receiving waters, and other relevant factors 	451.3(b)(1)
2) Oral reporting of structural failure or damage	<ul style="list-style-type: none"> • Provide an oral report within 24 hours of the discovery of any reportable failure or damage that results in a material discharge of pollutants • Describe the cause of the failure or damage in the containment system • Identify materials that have been released to the environment as a result of the failure 	451.3(b)(2)
3) Written reporting of structural failure or damage	<ul style="list-style-type: none"> • Provide a written report within 7 days of discovery of the failure or damage • Document the cause of the failure or damage • Estimate the time elapsed until the failure or damage was repaired • Estimate materials that have been released to the environment as a result of the failure or damage • Describe steps being taken to prevent a reoccurrence 	451.3(b)(3)
Spills		451.3(c)
1) Oral reporting of spills of drugs, pesticides, and feed	<ul style="list-style-type: none"> • Provide an oral report to the permitting authority within 24 hours of any spill of drugs, pesticides, and feed that results in a discharge to waters of the United States • Identify the material spilled and quantity 	451.3(c)
2) Written reporting of spills of drugs, pesticides, and feed	<ul style="list-style-type: none"> • Provide a written report to the permitting authority within 7 days of any spill of drugs, pesticides, and feed that results in a discharge to waters of the United States • Identify the material spilled and quantity 	451.3(c)

Table 2.2–2. Summary of Final Requirements for Flow-through and Recirculating Facilities, Continued

<i>Narrative Requirements</i>		<i>Reference</i>
Best Management Practices Plan		451.3(d)
1) Development and maintenance of a BMP plan on site that describes how the permittee will achieve the following five requirements:		451.3(d)(1)(i)
a) Solids control	<ul style="list-style-type: none"> • Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth in order to minimize potential discharges of uneaten feed and waste products to waters of the United States • Identify and implement procedures for routine cleaning of rearing units and offline settling basins • Identify procedures for inventorying, grading, and harvesting aquatic animals that minimize discharge of accumulated solids • Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent discharge to waters of the United States, except where authorized by the permitting authority in order to benefits the aquatic environment 	451.11(a)
b) Material storage	<ul style="list-style-type: none"> • Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed to waters of the United States • Implement procedures for properly containing, cleaning, and disposing of any spilled materials 	451.11(b)
c) Structural maintenance	<ul style="list-style-type: none"> • Routinely inspect production systems and wastewater treatment systems to identify and promptly repair damage • Regularly conduct maintenance of production systems and wastewater treatment systems to ensure their proper function 	451.11(c)
d) Record-keeping	<ul style="list-style-type: none"> • Maintain records for aquatic animal rearing units documenting feed amounts and estimates of the numbers and weights of aquatic animals in order to calculate representative feed conversion ratios • Keep records documenting frequency of cleaning, inspections, maintenance, and repairs 	451.11(d)
e) Training	<ul style="list-style-type: none"> • Train all relevant personnel in spill prevention and how to respond in the event of a spill to ensure proper clean-up and disposal of spilled materials • Train personnel on proper operation and cleaning of production and wastewater treatment systems, including feeding procedures and proper use of equipment 	451.11(e)
2) Make the plan available to the permitting authority upon request		451.3(d)(1)(ii)
3) Certify that a BMP plan has been developed		451.3(d)(2)

Table 2.2–3. Summary of Final Requirements for Net Pen Facilities

General Reporting Requirements		Reference
Drugs		451.3(a)
1) Reporting of intention to use INADs	<ul style="list-style-type: none"> • Provide the permitting authority with a written report, within 7 days of agreeing or signing up to participate in an INAD study • Identify the INAD to be used, method of use, the dosage, and the disease or condition the INAD is intended to treat 	451.3(a)(1)
2) Oral reporting of INAD and extralabel drug use	<ul style="list-style-type: none"> • Provide an oral report to the permitting authority as soon as possible, preferably in advance of application, but no later than 7 days after initiating use of the drug • Identify drugs used, method of application, and the reason for adding that drug 	451.3(a)(2)
3) Written reporting of INAD and extralabel drug use	<ul style="list-style-type: none"> • Provide a written report to the permitting authority within 30 days after initiating use of the drug • Identify the drug used and include the reason for treatment, date(s) and times(s) of the addition (including duration), method of application, and the amount added 	451.3(a)(3)
Structural Integrity		451.3(b)
1) Specification of reportable damage and/or material discharge	<ul style="list-style-type: none"> • The permitting authority may specify in the permit what constitutes reportable damage and/or material discharge of pollutants, based on consideration of production system type, sensitivity of the receiving waters, and other relevant factors 	451.3(b)(1)
2) Oral reporting of structural failure or damage	<ul style="list-style-type: none"> • Provide an oral report within 24 hours of the discovery of any reportable failure or damage that results in a material discharge of pollutants • Describe the cause of the failure or damage in the containment system • Identify materials that have been released to the environment as a result of the failure 	451.3(b)(2)
3) Written reporting of structural failure or damage	<ul style="list-style-type: none"> • Provide a written report within 7 days of discovery of the failure or damage • Document the cause of the failure or damage • Estimate the time elapsed until the failure or damage was repaired • Estimate materials that have been released to the environment as a result of the failure or damage • Describe steps being taken to prevent a recurrence 	451.3(b)(3)
Spills		451.3(c)
1) Oral reporting of spills of drugs, pesticides, and feed	<ul style="list-style-type: none"> • Provide an oral report to the permitting authority within 24 hours of any spill of drugs, pesticides, and feed that results in a discharge to waters of the United States • Identify the material spilled and quantity 	451.3(c)
2) Written reporting of spills of drugs, pesticides, and feed	<ul style="list-style-type: none"> • Provide a written report to the permitting authority within 7 days of any spill of drugs, pesticides, and feed that results in a discharge to waters of the United States • Identify the material spilled and quantity 	451.3(c)

Table 2.2-3. Summary of Final Requirements for Net Pen Facilities, Continued

<i>Narrative Requirements</i>		<i>Reference</i>
Best Management Practices Plan		451.3(d)
1) Develop and maintain a BMP plan on site that describes how the permittee will achieve the following seven requirements:		451.3(d)(1)(i)
a) Feed monitoring	<ul style="list-style-type: none"> • Employ efficient feed management and feeding strategies that limit feed input to the minimum amount reasonably necessary to achieve production goals and sustain targeted rates of aquatic animal growth • Minimize accumulation of uneaten feed beneath the pens through active feed monitoring and management strategies approved by the permitting authority 	451.21(a)
b) Waste collection and disposal	<ul style="list-style-type: none"> • Collect, return to shore, and properly dispose of all feed bags, packaging materials, waste rope, and netting 	451.21(b)
c) Transport or harvest discharge	<ul style="list-style-type: none"> • Minimize any discharge associated with the transport or harvesting of aquatic animals (including blood, viscera, aquatic animal carcasses, or transport water containing blood) 	451.21(c)
d) Carcass removal	<ul style="list-style-type: none"> • Remove and dispose of aquatic animal mortalities properly on a regular basis to prevent their discharge into the waters of the United States 	451.21(d)
e) Materials storage	<ul style="list-style-type: none"> • Ensure proper storage of drugs, pesticides, and feed in a manner designed to prevent spills that may result in the discharge of drugs, pesticides, or feed into waters of the United States • Implement procedures for properly containing, cleaning, and disposing of any spilled material 	451.21(e)
f) Structural maintenance	<ul style="list-style-type: none"> • Inspect production systems on a routine basis in order to identify and promptly repair any damage • Conduct regular maintenance on the production system in order to ensure its proper function 	451.21(f)
g) Record-keeping	<ul style="list-style-type: none"> • Maintain records for aquatic animal net pens documenting the feed amounts and estimates of the numbers and weight of aquatic animals in order to calculate representative feed conversion ratios • Keep records of net changes, inspections, and repairs 	451.21(g)
h) Training	<ul style="list-style-type: none"> • Train all relevant personnel in spill prevention and how to respond to spills to ensure proper clean-up and disposal of spilled materials • Train staff on proper operation and cleaning of production system, including feeding procedures and equipment 	451.21(h)
2) Make the plan available to the permitting authority upon request		451.3(d)(1)(ii)
3) Certify that a BMP plan has been developed		451.3(d)(2)

2.3 REFERENCES

Goodwin, J. 2004. *Conversation with Dennis Merrill, Maine Department of Environmental Protection*. U.S. Environmental Protection Agency, Washington, DC.

USEPA (U.S. Environmental Protection Agency). 2004. *Economic and Environmental Impact Analysis of the Final Effluent Limitations Guidelines and Standards for the Concentrated Aquatic Animal Production Industry Point Source Category*. EPA 821-R-04-013. U.S. Environmental Protection Agency, Washington, DC.