

for the 2002 Notice was from July 23, 2002, through August 22, 2002. Approximately 150 comments were received on the 2002 Notice. Responses to each of these comments are also included in the *Comment Response Document*.

In addition to the public comments received on the proposal and the two Notices, approximately 200 additional comments on the two Notices were received from various stakeholders. Responses to each of these comments are included in the *Comment Response Document*.

F. Public Outreach

In support of both the proposed rule and today's final rule, EPA has conducted extensive outreach activities. These activities are documented in the administrative record for the final rule, which is available for public review under docket number W-00-27. The discussion that follows is focused on key outreach activities that EPA has conducted.

1. Pre-Proposal Activities

During the development of the proposed regulations for CAFOs, EPA met with many members of the stakeholder community through meetings, conferences, and site visits. EPA convened a SBAR Panel to address small entity concerns, provided outreach materials to and met with several national organizations representing State and local governments, and conducted approximately 110 site visits to collect information on waste management practices at livestock and poultry operations. EPA also established a workgroup that included representatives from USDA, seven States, EPA regions, and EPA headquarters. More detailed information on EPA's public outreach efforts was published in section XII of the **Federal Register** notice for the proposed rule (66 FR 3120).

2. Post-Proposal Activities

a. Public meetings and stakeholder outreach. Following publication of the proposed rulemaking, EPA conducted nine public outreach meetings on the proposed CAFO regulations. In addition, EPA continued to meet with representatives of various stakeholder groups, including representatives from various industry trade associations and environmental groups, as well as researchers from select land grant universities and research organizations. The land grant university staff consulted on this rulemaking included researchers at the Food and Agricultural Policy Research Institute (FAPRI) at the

University of Missouri and researchers at The National Center for Manure and Animal Waste Management, composed of researchers from 16 land grant universities supported by USDA-Cooperative State Research, Education and Extension Service (CSREES). EPA has also consulted with State and local governments and several national associations representing State governments. A more detailed account of these efforts is provided in the 2001 Notice (66 FR 58557-58558).

b. USDA-EPA Workgroup meetings. In April 2001 USDA initiated a process to review the proposed revisions to EPA's CAFO rule and identify issues and concerns posed by the rule. USDA identified 15 specific areas of concern and a number of overarching issues. As a follow-up to this process, USDA and EPA's Office of Water initiated monthly meetings on issues of significance for agriculture and the environment, specifically water quality. The goal was to foster greater communication between the two agencies to provide better information to the public and policy makers on areas of mutual concern related to agriculture and water quality, and to facilitate informed decisions on approaches and needs to address the key agriculture and environment issues. In July 2001 EPA and USDA convened a joint workgroup to address the issues identified by the two agencies and begin to develop options for EPA leadership to consider in developing the final rule. The collaboration fostered increased understanding on the part of both agencies with respect to the issues, data, and analyses used to finalize today's CAFO rule.

c. Other outreach activities. As part of the development of this rulemaking, EPA used several additional means to provide outreach to stakeholders. Most notably, EPA has managed a number of Web sites that post information related to these regulations. Supporting documents for the proposed rule were posted to these sites, including the *Technical Development Document*, *Economic Analysis*, *Environmental Assessment*, *Environmental and Economic Benefit Analysis* of the proposed CAFO regulations, and cost methodology reports and guidance related to Permit Nutrient Plans. These are available at <http://www.epa.gov/guide/cafo/>. Other outreach materials are available at <http://www.epa.gov/npdes/caforule> and include brochures describing the proposed CAFO regulations, a compendium of AFO-related State program information, and various materials related to permitting issues to facilitate an understanding of

the NPDES program and development of comments on the proposed rule by the public.

IV. CAFO Roles and Responsibilities

A. Who Is Affected by This Rule?

1. What Is an AFO?

In today's final rule, EPA is retaining the definition of an animal feeding operation (AFO) as it was defined in the 1976 regulation at 40 CFR 122.23(b)(1). An animal feeding operation means a lot or facility (other than an aquatic animal production facility) where the following conditions are met: (1) Animals have been, are, or will be stabled or confined and fed or maintained for a total of 45 days or more in any 12-month period, and (2) crops, vegetation, forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility. (**Note:** EPA is making a typographical correction to the AFO definition. The comma between vegetation and forage growth had been inadvertently dropped from the 1976 final rule in subsequent printings of the **Federal Register**).

What did EPA propose? In the January 12, 2001, proposed rule, the Agency proposed to change the definition of an AFO, intending to eliminate ambiguities about which facilities and operations would be defined as AFOs in certain circumstances where the animals strip the ground of vegetation. The proposal stated that " * * * Animals are not considered to be stabled or confined when they are in areas such as pastures or rangeland that sustain crops or forage growth during the entire time that animals are present * * *."

What were the key comments? While it was EPA's intent to clarify the existing AFO definition, the proposed new regulatory language created substantial confusion. For example, many commenters from the beef cattle industry and others strongly believed that the proposed language would include pastures, rangeland, and unconfined wintering operations as AFOs and, in essence, would bring the entire beef industry under the regulations, none of which was intended. These commenters strongly recommended that the existing regulations should be kept intact to avoid new ambiguity. The view of commenters from the dairy sector and the Sustainable Agriculture Coalition was that the exclusion of pastureland and rangeland from the AFO definition was clear in the proposed rule and they found the proposed language acceptable. Other livestock sectors and environmental groups generally did not comment extensively on this issue.

Rationale. Based on public comment and further consideration, EPA concludes that the proposal to revise the AFO definition to exclude areas “that sustain crops or forage growth during the entire time that animals are present” created further concern and confusion, rather than clarification. EPA’s intent was to make a minor change to the AFO definition to clarify how it would apply to wintering/grazing operations and to incidental vegetation that may exist in the area of confinement. EPA is retaining the existing definition for animal feeding operation because of the widespread familiarity that exists with the existing definition and because EPA’s desired clarification can be achieved through preamble language rather than a change to the rule.

In an attempt to address some of the public comments and confusion created by the proposal, EPA is clarifying three topics in this preamble. First, EPA is reiterating that true pasture and rangeland operations are not considered AFOs, because operations are not AFOs where the animals are in areas such as pastures, croplands or rangelands that sustain crops or forage growth during the normal growing season. In some pasture based operations, animals may freely wander in and out of particular areas for food or shelter; this is not considered confinement. However, pasture and grazing-based operations may also have confinement areas (e.g. feedlots, barns, pens) that may qualify as an AFO. Second, incidental vegetation in a clear area of confinement, such as a feedlot or pen, would not exclude an operation from meeting the definition of an AFO. Third, in the case of a winter feedlot, the “no vegetation” criterion in the AFO definition is meant to be evaluated during the winter, when the animals are confined. Therefore, use of a winter feedlot to grow crops or other vegetation during periods of the year when animals are not confined would not exclude the feedlot from meeting the definition of an AFO. Note that animals must be stabled or confined for at least 45 days out of any 12 month period to qualify the operation as an AFO. EPA assumes that AFOs and permitting authorities will use common sense and sound judgement in applying this definition.

2. What Is a CAFO?

In today’s final rule, EPA is retaining the existing structure for determining which AFOs are CAFOs, as well as retaining the existing conditions for defining Medium CAFOs. EPA is also retaining the existing conditions for designation of AFOs as CAFOs. Large facilities are considered CAFOs if they

fall within the size range provided in § 123.23(b)(4). Medium AFOs are defined as CAFOs only if they fall within the size range provided in § 122.23(b)(6) and they meet one of the two specific criteria governing the method of discharge: (1) Pollutants are discharged into waters of the United States through a man-made ditch, flushing system, or other similar man-made device; or (2) pollutants are discharged directly into waters of the United States that originate outside the facility and pass over, across, or through the facility or otherwise come into direct contact with the confined animals. Small facilities are CAFOs only if they are so designated by EPA or the State NPDES permitting authority. Refer to Table 4.1 in section IV.A.3 of this preamble for explicit definitions of Large, Medium, and Small CAFOs in each animal sector. Also, as proposed, EPA is no longer using the term “animal units” to define size classes in this final rule. Instead, EPA is setting thresholds by specifying the actual number of animals. EPA believes that using the number of animals at an operation to define thresholds more simply illustrates which operations are regulated. Using the number of animals also eliminates any confusion caused by the difference between EPA’s and USDA’s definitions of the term “animal unit.”

What did EPA propose? EPA co-proposed two alternative ways to structure the NPDES regulations for defining which AFOs are CAFOs. The first alternative was a “two-tier structure,” and the second was a “three-tier structure.” In the first alternative, EPA proposed that all AFOs with the equivalent of 500 animal units or more would be defined as CAFOs, and those with fewer than the equivalent of 500 animal units would be CAFOs only if they are designated as such by EPA or the State NPDES permitting authority. In the second alternative, EPA proposed to retain a three-tier structure whereby all large operations are CAFOs, medium operations are CAFOs if they meet specified risk-of-discharge criteria, and small operations are CAFOs only if they are so designated by EPA or the State NPDES permitting authority. EPA also proposed to significantly revise the conditions whereby a medium AFO could be defined as a CAFO. Finally, EPA proposed to require all medium AFOs to certify to the permitting authority that they do not meet any of the conditions for being defined a CAFO.

What were the key comments? The predominance of public comment did not support the two-tier structure, as

proposed, whereby all operations with the equivalent of 500 animal units or more would be CAFOs. Many commenters opposed such a low threshold as imposing unnecessary permitting and engineering costs on small operations and on operations that do not discharge, and would very likely cause many small operators to go out of business. Opponents also indicated that the proposal did not recognize geographic differences such as arid regions. Many of those same comments were, however, supportive of a two-tier structure if the regulatory threshold was set at the equivalent of 1,000 animal units or even 750 animal units, leaving discretion for the permitting authority to address all operations below that threshold. Conversely, some commenters indicated that 500 animal units was too high, because it did not address the pollution from smaller operations in their region. There was some preference for a two-tier structure that regulates all facilities above the equivalent of 300 AU, believing that all those operations pose risk to the environment and should be regulated as CAFOs.

Many commenters, including many State agencies, preferred to retain the existing three-tier structure because so many of their existing programs are based on the three-tier structure established in the 1976 regulations. They believe it would be very disruptive to their ongoing programs to have to change the basic structure of the regulations that define who is a CAFO.

Additionally, there was little support among the commenters for the three-tier structure, as proposed, with the new set of broad conditions that were proposed for redefining which of the medium facilities would be CAFOs. Many commenters believed that the existing conditions were adequate for addressing risk of discharge from medium facilities, and that the proposed new conditions would be an unnecessary expansion of who would be considered CAFOs. Further, many commenters indicated that the revised conditions did not add clarity and would not improve implementation. For example, many commenters indicated that one of the proposed conditions, whether an AFO was within 100 feet of waters of the United States, did not take into account facilities that are implementing BMPs to control runoff. The condition for evidence of discharge in the last five years did not take into account operations that may have instituted new practices or corrected problems to prevent future discharges, especially in light of the fact that, in the last two or three years, there has been heightened

awareness of the impacts of AFOs and renewed effort by States to implement both regulatory and non-regulatory AFO programs. The condition defining a facility as a CAFO if it transferred excess manure to off-site recipients also did not correlate closely enough to whether a facility had a risk of discharging, especially in arid regions.

The SBAR Panel did not make a recommendation specifically on the structure of the CAFO regulations. The Panel noted that some States already have effective permitting programs for CAFOs in place and recommended that EPA consider the impact of any new requirements on existing State programs and include in the proposed rule sufficient flexibility to accommodate such programs where they meet the minimum requirements of federal NPDES regulations. The Panel further recommended that EPA continue to consult with States in an effort to promote compatibility between federal and State programs.

Rationale. The Clean Water Act specifically lists CAFOs as point sources, and EPA has broad discretion under the Act to define that term. In the proposal, EPA noted a range of different factors that it considered relevant to determining which operations should be defined as CAFOs.

EPA has concluded that a three-tier structure is preferable to a two-tier structure because it is better suited to identifying those operations that, through a combination of size, concentration and potential to discharge, are more industrial and point source-like in nature and pose the greatest risk to water quality and therefore are appropriate to define as CAFOs. Another important reason to retain a three-tier structure is that changing to a two-tier structure at this point in time would be unnecessarily disruptive in the number of States that currently have three-tier CAFO programs in place. Many of these States have had these programs in place for over two decades, and they have many years of practical experience in operating their programs and issuing permits based on this existing definition. Changing to a two-tier structure not only would be disruptive to the States that are carrying out existing programs but would also create an unnecessary need to build a new understanding of the regulations in the CAFO industry. For these reasons, a three-tier structure is preferable even though it does not have the simplicity of a two-tier structure.

Establishing a two-tier structure at a low threshold, e.g., at either 300 animal

units or 500 animal units would be highly burdensome to permit authorities and AFO operators. While some parts of the country experience problems from concentrations of small facilities, this would impose significant costs on the regulated community and permit authorities in all parts of the country, including those areas that do not experience these problems. On the other hand, while it might seem desirable to provide flexibility for States with effective non-NPDES programs by establishing a threshold on the higher end, say at 750 or 1,000 animal units, using such a high threshold across-the-board would apply equally in States that do not have fully developed and effective programs to address water quality risks posed by operations with fewer than 1,000 animal units. This could lead to a definition that would not appropriately identify those operations that are large and concentrated enough and pose enough of a risk of discharge (taking into account the absence of effective State non-NPDES programs in some areas) that they should be identified as CAFOs. A high threshold might also undercut the ability of some permit authorities to address water quality problems associated with smaller facilities, especially in States that have restrictions on imposing CAFO NPDES requirements that are stricter than federal requirements.

Although the final rule retains the three-tier structure for defining who is a CAFO, after consideration of the public comments, EPA has not adopted the new set of conditions that were proposed for defining which medium operations are CAFOs. Instead, EPA is retaining the two conditions in the existing regulations. After careful consideration of the comments, EPA agrees with those commenters who believe that the new set of conditions proposed under the three-tier structure for determining when a medium facility is a CAFO would not necessarily have improved the clarity, effectiveness or enforceability of the regulations, which were the Agency's intended goals. The proposed new conditions were an attempt to better identify those medium operations that are of sufficient size and concentration and pose enough of a risk of discharge that they should be defined as CAFOs. While these conditions may have been environmentally protective on the whole, they were not finely targeted enough to identify the operations that meet these criteria; instead, EPA now believes that they would have caused substantial permitting burden and imposed costs on

essentially all operations above 300 animal units.

For example, many commenters indicated that one of the proposed conditions, whether an AFO was within 100 feet of waters of the United States, did not take into account facilities that are implementing BMPs to control runoff. The condition for evidence of discharge in the last five years did not take into account operations that may have instituted new practices or corrected problems to prevent future discharges, especially in light of the fact that, in the last two or three years, there has been heightened awareness of the impacts of AFOs and renewed effort by States to implement both regulatory and non-regulatory AFO programs. The conditions defining a facility as a CAFO if it did not have a permit nutrient plan or if it transferred excess manure to off-site recipients also did not correlate closely enough to whether a facility had a risk of discharging, especially in arid regions.

EPA has concluded that retaining the existing two criteria provide an appropriate basis for defining which medium-size operations are CAFOs, while maintaining flexibility for States to tailor NPDES and non-NPDES programs for more comprehensive risk factors that may vary from State to State and even watershed to watershed.

3. What Types of Animals Are Covered by Today's Rule?

Today's revisions to the CAFO effluent guidelines address beef, dairy, swine, veal calves and poultry operations and do not change the effluent guidelines regulations for sheep, horses or ducks. On the other hand, today's final revisions to the NPDES permit regulations generally apply to all CAFOs regardless of species, and specifically address the size thresholds for defining which beef, dairy, swine, veal calves, poultry, sheep, horses, and duck operations are CAFOs. The following sections discuss changes made to the size thresholds for defining which operations in these sectors are CAFOs.

Although the following discussion focuses primarily on circumstances where an AFO is defined as a CAFO, it is important to note that small and medium-size AFOs can be designated as CAFOs by EPA or an NPDES authorized State. Refer to section IV.A.7 and 8 for a discussion of designation.

The thresholds for defining Large, Medium, and Small CAFOs in each sector are summarized in Table 4.1 below.

TABLE 4.1.—SUMMARY OF CAFO SIZE THRESHOLDS FOR ALL SECTORS

Sector	Large	Medium ¹	Small ²
Cattle or cow/calf pairs	1,000 or more	300–999	Less than 300.
Mature dairy cattle	700 or more	200–699	Less than 200.
Veal calves	1,000 or more	300–999	Less than 300.
Swine (weighing over 55 pounds)	2,500 or more	750–2,499	Less than 750.
Swine (weighing less than 55 pounds)	10,000 or more	3,000–9,999	Less than 3,000.
Horses	500 or more	150–499	Less than 150.
Sheep or lambs	10,000 or more	3,000–9,999	Less than 3,000.
Turkeys	55,000 or more	16,500–54,999	Less than 16,500.
Laying hens or broilers (liquid manure handling system).	30,000 or more	9,000–29,999	Less than 9,000.
Chickens other than laying hens (other than a liquid manure handling system).	125,000 or more	37,500–124,999	Less than 37,500.
Laying hens (other than a liquid manure handling system).	82,000 or more	25,000–81,999	Less than 25,000.
Ducks (other than a liquid manure handling system) ...	30,000 or more	10,000–29,999	Less than 10,000.
Ducks (liquid manure handling system)	5,000 or more	1,500–4,999	Less than 1,500.

¹ Must also meet one of two “method of discharge” criteria to be defined as a CAFO or may be designated.

² Never a CAFO by regulatory definition, but may be designated as a CAFO on a case-by-case basis.

A facility confining any other animal type that is not explicitly mentioned in the NPDES and effluent guidelines regulations is still subject to NPDES permitting requirements if it meets the definition of an AFO and if the permitting authority designates it as a CAFO. See § 122.23(c) for a discussion of designation.

a. *Chickens.* In today’s action, EPA is revising the CAFO definition to include

chicken operations that use manure handling systems other than liquid manure handling systems (see 40 CFR Part 122, Appendix B of the 1976 regulation). EPA has also eliminated the condition for continuous overflow watering system from the CAFO definition. This action establishes that dry litter chicken operations of specified sizes will need to seek coverage under an NPDES CAFO permit. EPA is

establishing size thresholds for dry chicken operations based on the phosphorus content of the manure, and is therefore distinguishing between broiler and layer operations. EPA is not changing the existing threshold for chicken operations using liquid manure systems. The size thresholds for large, medium, and small chicken operations under today’s regulations are as follows:

	Large	Medium	Small
Chickens other than laying hens (other than liquid manure handling).	125,000 or more	37,500–124,999	<37,500
Laying hens (other than liquid manure handling)	82,000 or more	25,000–81,999	<25,000
Laying hens or broilers (liquid manure handling)	30,000 or more	9,000–29,999	< 9,000

What did EPA propose? EPA proposed to regulate chicken operations regardless of the type of manure handling or watering system used. EPA proposed to include broilers and layers in a single category with one threshold number. Under the co-proposed three-tier structure, EPA proposed to adopt a Large CAFO threshold of 100,000 chickens and a Medium CAFO threshold of 30,000 chickens. In the co-proposed two-tier structure, the regulatory threshold would have been 50,000 chickens. Subsequently, EPA published a notice of data availability (FR 67, 48099, July 23, 2002) in which the Agency considered whether, under a three-tier structure, the threshold for large broiler operations should remain as proposed at 100,000 broilers, changed to 125,000 broilers, or established at some other threshold. EPA also considered whether the large threshold for laying hens should remain as proposed at 100,000 laying hens, or be changed to 82,000 laying hens. EPA also

noted that the thresholds in the 1976 CAFO regulations for chicken operations with liquid manure handling systems or continuous overflow watering systems may remain unchanged in the final rule.

What were the key comments? Comments from poultry industry representatives and owners and operators of poultry operations stated that dry operations (those not using continuous flow watering systems) should not be defined as CAFOs under the NPDES regulations because the absence of water or other liquids would not result in pollutants being discharged through a discrete point source. Some industry representatives asserted that dry and wet manure handling pose different levels of risk and, therefore, EPA’s CAFO regulations should distinguish between wet and dry poultry operations. A few commenters indicated that they felt that EPA was proposing to regulate dry poultry operations to address insufficient

storage issues at some operations. These commenters believed that properly stored poultry litter would not result in a discharge. In addition some commenters disagreed with EPA’s statement that many poultry operations did not have sufficient land to apply litter at agronomic rates. Commenters from this sector also felt that voluntary programs were working to address the excess manure issue. A more limited number of commenters indicated that the inclusion of dry poultry operations should be limited to what they described as very large operations. Commenters defined very large as ranging from more than six houses to more than 10,000 animal units (e.g., 300,000 birds).

Many other commenters supported regulating poultry operations regardless of the watering systems they use because that approach provides equity across all animal sectors and addresses potential risk to water quality posed by dry operations. Some commenters

further stated that EPA should use manure phosphorus as the basis for setting thresholds for such operations.

Rationale. Why is EPA including chicken operations with dry manure and litter handling systems in today's regulations? For some time, poultry operators have been replacing continuous overflow watering systems by more efficient water conserving methods (e.g., on-demand watering). Given this trend, liquid manure systems are used at approximately 25 percent of layer operations and are not generally used at broiler operations. As a result, most chicken operations are not covered by the existing regulations.

For the reasons articulated in the proposed rulemaking (66 FR 3010), and after carefully reviewing the public comments, EPA has determined that including chicken operations with dry manure handling systems is justified to protect water quality. EPA believes that dry poultry operations continue to contaminate surface water and ground water because of rainfall coming in contact with dry manure and litter that is stacked in exposed areas; accidental spills such as from egg-wash facilities and drinking water lines; improper handling of large numbers of mortalities; and improper land application of litter. In addition, included within the coverage of the CAFO regulations are other sectors that use dry technologies, such as ducks, turkeys, and certain swine, beef, and dairy operations using total confinement housing. Inclusion of dry poultry operations is consistent with the regulation of both wet and dry operations within these other animal sectors.

Why were the size thresholds selected? EPA believes that it is appropriate to distinguish between potential risk of discharge posed by wet versus dry handling systems, using the pollutant of most concern, i.e. phosphorus, for establishing regulatory thresholds. For nitrogen and BOD, the levels for broilers would result in similar thresholds varying only by 1% to 3%. EPA agrees with commenters who asserted that EPA should determine the chicken threshold values by evaluating phosphorus content in the manure on an annual basis, which takes into account that phosphorus production does not continue during the periods of the year when no manure is generated (i.e., clean out time between flocks when no broilers are present). Traditionally, layers were kept through one year of egg production and sold for meat at 18 to 20 months of age (see Section 4 of the *Technical Development Document*). Depending on the relative

price of eggs to hens, it has become increasingly common to recycle layers through more than one year of production. Flock recycling consists of stopping the flock's egg production, allowing a suitable rest period, and then bringing the flock back into production. The entire process is known as "force-molting". Some producers now keep the birds through two or three complete cycles of egg production. Laying hens are now typically kept for 94 weeks of production. Since layers will continue to produce manure throughout the year the daily phosphorus levels were used in setting thresholds for laying hens. Therefore, EPA is establishing different thresholds based first on wet versus dry manure systems and second on the broad type of poultry, e.g., chickens for meat (broilers) and chickens for eggs (layers) based on phosphorus content of manure generation.

b. Swine Nurseries and Heifer Operations. Today's rule regulates swine nurseries and heifer operations that are defined as CAFOs. Specifically, the Agency has adopted a Large CAFO threshold of 10,000 or more immature swine (i.e. weighing less than 55 pounds) and a Medium CAFO threshold of 3,000 to 9,999 immature swine. For heifers, EPA has adopted a Large CAFO threshold of 1,000 head or more and a Medium CAFO threshold of 300 to 999 head.

What did EPA propose? EPA is adopting what was proposed for these animal types in a three-tier structure.

What were the key comments? While a majority of commenters supported the inclusion of immature swine and dairy cattle in the proposed rule, a number of commenters opposed this change, and preferred to retain the exemption for immature animals. A number of commenters noted that many States already have programs at least as strict as the one EPA is proposing, and that States should be allowed the flexibility to determine if including operations with immature animals would improve water quality.

Rationale. Immature swine were not a concern in the past because they were usually part of operations that included mature animals and, therefore, their manure was included in the permit requirements of the CAFO. However, in recent years, these swine operations have become increasingly specialized, increasing the number of large, separate nurseries where only immature swine are raised.

Under the three-phase production pyramids used by most large swine operations, specialized farrowing operations that house only sows and piglets until weaned represent the first

phase of raising swine. The weaned piglets are transferred to a nursery at a separate location until they reach about 55 to 60 pounds, at which time they are transferred to a grow-finish facility at another site. EPA's thresholds for swine weighing less than 55 lbs were established on the basis of the average phosphorus excreted from immature swine in comparison to the average phosphorus excreted from swine weighing more than 55 pounds. (Refer to the *Technical Development Document* for more details).

For dairies, immature heifers are often removed to a separate location until they reach maturity. EPA data indicate that some of these animals are confined, some are pastured, and some move back and forth between confinement and pasture. The previous CAFO definition considered only the mature milking cows in determining whether an operation was a CAFO and did not address operations that separately confine immature heifers. EPA believes that these separately confined heifer operations should be included in the regulatory definition of a CAFO because they may generate as much manure as a CAFO dairy given that the animals are maintained until fully grown, and they confine the animals in a manner very similar to CAFO beef feedlots.

EPA agrees that the number of immature animals kept in confinement with mature animals varies greatly and should not be the basis for determining whether an AFO is a CAFO. In situations where immature animals (e.g. heifers and swine) are confined with mature animals, the immature animals are not counted for purposes of determining whether an AFO is defined as a CAFO based on the number of mature animals. Once an AFO is defined as a CAFO, based on any of the threshold values provided in table 4.1, manure and process wastewater generated by all immature and mature animals in confinement would be subject to NPDES permit requirements.

c. Horses. Today's rule retains the animal number thresholds for defining which horse operations are CAFOs. AFOs with 500 or more horses are defined as Large CAFOs, AFOs with 150 to 499 horses are defined as Medium CAFOs under certain conditions (see § 122.23(b)(7)), and AFOs with fewer than 150 horses are Small CAFOs only if designated in accordance with § 122.23(c).

What did EPA propose? In the January, 2001 proposed rule, EPA did not consider changing the CAFO definition thresholds for horses. As a result of the comments and data received on the proposal, EPA

considered in a subsequent Notice of Data Availability (66 FR 58556, November 21, 2001) two alternative options for revising the horse thresholds. One option would retain the existing regulatory threshold in a two-tier structure. For example, if the regulatory threshold was dropped to 500 AU, EPA would retain 500 horses as the 500 AU equivalent, and those with fewer than 500 horses would be CAFOs only if so designated on a case-by-case basis. EPA suggested this option because the Agency agreed with commenters that there was no need to increase regulation of this sector; by maintaining the status quo EPA would be neither increasing nor decreasing the regulated universe. In the second option, EPA would have set one horse equal to one beef cow thereby establish regulatory thresholds similar to those for beef operations. As a result, in a three-tier structure, Large horse CAFOs would have 1,000 animals or more, and Medium horse CAFOs would have 300–999 horses. EPA presented the second option after examining data submitted by industry that suggested that a 1,000 pound horse may generate similar manure as a 1,000 pound beef cow. However, because that data did not differentiate thoroughbred race horses (typically on high-energy feed which might alter manure composition) from other horses, EPA requested more definitive data to justify the second approach.

What were the key comments? A number of comments were submitted by horse industry associations and individual horse operations requesting that EPA not lower the threshold for horses, as the existing regulation was adequate. They further suggested that this rulemaking would be an opportunity to revisit the basis for the existing threshold, and requested that EPA change it to one horse being equal to one beef cattle, asserting that there is no scientific basis for making one horse equal to two beef cattle (which is how the existing regulation defines horse CAFOs). Industry representatives provided data on manure content to support their position, although they did not provide manure data specific to racehorses. The commenters also explained that the horse industry is fundamentally different in how it is organized and operated from the other sectors that focus on food production, and that this sector has not seen the kinds of changes (e.g., expansion and consolidation) that EPA is seeking to address in today's rule. Further, they point out that most large racetracks are in urban areas and are currently subject

to a variety of EPA-initiated and State-administered programs related to water pollution and storm water runoff control.

Some commenters requested that EPA not reduce the regulatory thresholds, and asked EPA to retain the ability of permit writers to use BPJ to establish site-specific BMPs. Industry representatives also asked the Agency to clarify that confinement pertains to stalls or similar structures in buildings and not to fenced areas, and that it does not include short visits to stalls for shoeing, veterinary evaluation, or related activities.

Rationale. It should be noted that the thresholds for the CAFO definition refer only to horse operations where animals are confined for 45 days (non-consecutive) over a 12 month period. Thus, to be considered a Large CAFO, the operation would need to confine 500 horses at one time for 45 days or longer in a 12-month period, and to be a Medium CAFO at least 150 horses would need to be confined for 45 days or longer in a 12-month period. The areas associated with confinement at horse facilities would constitute the production area, and would not include pastures and other unconfined areas. EPA notes the 1974 ELG for horses assumed the majority of horse CAFOs were racetracks. Although race tracks accounted for less than 0.1 percent of all horse operations today, race tracks still account for more than 96% of all horse operations with 500 horses or more. Boarding/training stables comprise the remaining few operations with 500 horses or more. Such operations would not be considered CAFOs unless all of the horses were kept in confinement (as opposed to pasture). Data suggests most horse operations confine their animals for short-term stabling or visits to stalls for shoeing, veterinary evaluation, or related activities. However, according to consultations with the American Horse Council, it is unlikely that these visits would involve a number of horses large enough to define the operation as a CAFO. For example, a ranch maintaining over 500 horses would typically have fewer than 100 stalls or stables (i.e. confinement areas). Therefore, those operations that confine enough horses for a long enough period to be defined as CAFOs are generally racetracks.

In the 1970s regulations, the Agency considered racetracks when originally determining the size of an operation that must comply with the effluent guidelines, and the records indicate the size of operation was based on the manure generated by thoroughbred racehorses. Based on some comments

that EPA should re-evaluate the classification of horses by bodyweight or manure content, EPA collected more current manure characteristics data from ASAE, USDA, and based on this data presented alternative thresholds for horses in the 2001 NODA (see 66 FR 225, page 58595). After reviewing the data, EPA generally agrees that the phosphorus content of horse manure is similar to that of a beef cow. However, as described above, the majority of horse CAFOs are racetracks, and the more general data on recreational and work horses is not comparable. The Agency also reviewed the data submitted by horse industry representatives and determined that this data also did not distinguish manure generated by racehorses with that of a recreational or farm horse, and thus EPA does not believe the record is sufficient to justify a change to the existing regulatory thresholds.

The effluent guideline, which is not being changed in today's final rulemaking, continues to be applicable to those horse operations confining 500 horses or more, including stables such as at racetrack operations. Other horse operations that may be defined or designated as CAFOs would continue to follow permit requirements based on the BPJ of the permitting authority.

d. Ducks. Today's final rulemaking revises the thresholds for defining whether a duck operation is a CAFO. The following thresholds apply to duck operations where the AFO uses other than a liquid manure handling system ("dry systems"): 30,000 or more ducks for a Large CAFO and 10,000 to 29,999 ducks for a Medium CAFO. For small operations with fewer than 10,000 ducks, EPA or the State permitting authority may designate them as a CAFO. For operations where the AFO uses a liquid manure handling system ("wet systems"), EPA is retaining the existing thresholds. That is, those with 5,000 or more ducks are considered Large CAFOs; those with 1,500 to 4,999 ducks may be Medium CAFOs (if the other conditions are met); and small operations with fewer than 1,500 ducks would become CAFOs only if designated in accordance with § 122.23(c).

What did EPA propose? In the January, 2001 proposed rule, EPA did not consider changing the existing animal unit equivalents for ducks. As a result of comments received on the proposal, EPA considered in a subsequent 2001 Notice of Data Availability (NODA) (66 FR 58566, November 21, 2001) two alternative options for establishing thresholds for duck operations. One option would treat

dry systems similarly to chicken operations (e.g., at the time of the NODA, EPA was considering 100,000 ducks would have constituted a Large CAFO). Another option would establish a Large CAFO threshold of 30,000 ducks based on the quantity and content of duck manure, using data and recommendations supplied by Purdue University. In all cases, the threshold for Large CAFOs with wet systems would remain at 5,000 ducks.

What were the key comments? A number of commenters on both the proposal and the NODA from duck industry associations, individual duck operations and some States requested that EPA change the threshold in the CAFO definition for ducks. They urged EPA to consider revising the duck thresholds to a higher number. By retaining the 5,000 duck threshold, they noted, essentially all duck operations in the United States would be required to apply for an NPDES permit. Commenters noted that management practices have changed significantly since the 5,000 duck threshold was established. The management practices currently used to raise ducks are similar to chicken operations. Commenters claim that these dry facilities should be regulated like chicken operations, basing the threshold either on phosphorus manure levels or using a threshold similar to chickens. State commenters agree that the threshold for these types of facilities should be raised but suggest retaining the existing threshold for wet systems.

Rationale. The existing NPDES regulation and the effluent guideline make no distinction between dry and wet systems. The duck thresholds were originally established in the 1970s and were based primarily on ducks being raised outside on ponds or with a stream running through an open lot. These types of facilities have been referred to as "wet" lot operations. Today's regulation refers to them as AFOs that use liquid manure handling systems. This preamble also refers to them as "wet systems." For purposes of today's rulemaking, these include duck operations that use ponds, wet lots, or buildings with lagoons.

EPA agrees with commenters that the management practices more typically used today to raise ducks are similar to chicken operations where the birds are confined to a building on solid bedding or in a building with a concrete pit underneath it where manure collects. These types of facilities have been referred to as "dry lot" operations. Where these practices are utilized, and are not combined with liquid manure handling systems, such as lagoons, they

present much less risk of a discharge than do wet systems. Today's regulation refers to them as AFOs that use "other than liquid manure handling systems." This preamble also refers to them as "dry systems."

After examining information concerning the current technologies of the duck industry, EPA concurs that it is appropriate to adjust the regulatory thresholds for dry systems, while retaining the existing threshold for wet systems. EPA is setting the Large CAFO threshold for duck operations with dry systems at 30,000 birds or more based on data produced by Purdue University and the American Society of Agriculture Engineers (ASAE), which are available in the administrative record. This threshold was calculated using phosphorus manure levels and assuming an approximate 3 duck to 1 chicken ratio. The medium size threshold is 10,000 to 29,999 ducks and the small threshold is less than 10,000 ducks. These thresholds were set at these levels based on the same 3 duck to 1 chicken ratio. Data on both layer and broiler chickens were averaged to obtain this ratio. This threshold is generally consistent with the thresholds adopted in current State programs, especially Indiana where the majority of the duck operations are located. This decision is also consistent with today's final decision on the chicken threshold, where EPA has established higher thresholds for layer operations using other than liquid manure handling systems than for layer operations using liquid manure handling systems.

e. Cow/Calf. In today's final rule, a beef cow/calf pair counts as one animal when temporarily confined in a pen, lot, barn, or stable. However, a cow/calf pair counts as two animals after the offspring are weaned.

What did EPA propose? The proposed rule did not discuss a convention to count cow/calf pairs. In response to comments from the beef industry, EPA described a convention in the November 2001 NODA to count a cow/calf pair as one animal for 120 days after the calf is weaned, after which they would be considered two animals.

What were the key comments? Comments on the proposal from organizations and individuals representing the beef sector indicated that they thought the proposal would alter the way mature and immature beef cow pairs are counted. They commented that if a cow/calf pair was counted as two animals, the proposed rule would have a significant impact on small beef operations that are largely pasture-based. Environmental organizations

generally did not comment on this issue.

In comments on the 2001 Notice, States and industry commenters unanimously supported the proposal to explicitly count a cow/calf pair as one animal. Many commenters said that, in practice, producers think of the cow and calf as a single entity until weaning time when the young animal becomes physically separated and requires separate penning and housing, and suggested adopting this standard. Some commenters suggested other alternatives, such as counting a cow/calf pair as 1.2 animal units, or differentiating the AU equivalent based on the age of the calves (e.g., up to two months old the cow/calf would be counted as one animal unit, from two to six months calves would be counted as 0.3, from six months to a year counted as 0.6, etc.)

Rationale. As described in the 2001 Notice, EPA has always assumed that cow/calf operations are typically pasture-based and would not normally fall within the coverage of the CAFO regulations. Such operations typically confine animals only temporarily for birthing, veterinary care, or other purposes. This temporary confinement may result in the operation being defined as an AFO, in which case it could in turn be defined as a CAFO should it meet certain conditions. However, it is not likely that this temporary confinement would involve enough animals to define the operation as a CAFO. EPA would like to make it clear that it is still not the Agency's intention to regulate pasture-based or rangeland operations. Counting a cow/calf pair as one animal is consistent with how EPA treats mother/offspring pairs housed together at the same location in other sectors (e.g., dairy and swine).

After considering public comment, EPA determined that it was appropriate to consider a cow/calf pair as one animal until the calf is weaned, rather than to specify a particular time period after weaning, which would have entailed additional, potentially burdensome, record keeping requirements (e.g. date of weaning for each calf).

f. Eliminate the mixed animal calculation. With today's final rulemaking, EPA is eliminating the formula for calculating whether an AFO is a CAFO because of the accumulation of several different animal types in confinement at one facility. An AFO is defined as a CAFO only if the specific threshold for any one animal sector covered by today's final regulations is met. Once a given operation is defined

as a CAFO, regardless of animal type, the regulations apply to all of the manure, litter, and wastewater generated by the operation. In the event that waste streams from multiple livestock species are co-mingled, and the regulatory requirements for each species are not the same, the permit must include the more stringent requirements.

What did EPA propose? EPA proposed to eliminate the mixed animal calculation.

What were the key comments? A number of comments were received concerning the elimination of the mixed animal calculation. Commenters opposed to the elimination of the calculation believe it is more protective of the environment to count all of the animals at an operation, in order to address the cumulative quantities of manure through the CAFO permit. Some commenters also claimed that eliminating the mixed animal calculation would create an opportunity for larger operations to avoid permitting by maintaining slightly fewer than the regulatory thresholds for several types of animals. Comments supporting EPA's proposal agreed that this change simplifies the regulation, provides relief to small farms, and focuses the regulation on the larger, more specialized facilities that tend to be more industrialized.

Rationale. As described in the proposed rulemaking (66 FR 3005) EPA is eliminating the mixed animal calculation for several reasons. First, this action simplifies the regulations. In addition, EPA's analysis indicates that the mixed animal calculation would have caused only a small fraction of the smaller AFOs to have been defined as CAFOs, so the Agency believes that this action does not materially change the scope of coverage of this regulation. To the extent that coverage is changed at all, it appropriately would be shifted away from smaller operations that tend to have more sustainable practices and sufficient crop land for land application of their manure nutrients. Should an AFO with mixed animals types be found to be a significant contributor of pollutants to waters of the United States, it could still be designated a CAFO in accordance with the designation provisions of this final rule.

4. Is My AFO a CAFO If It Discharges Only During Large Storm Events?

Today's final rule defines an operation as a CAFO regardless of whether the operation discharges only in the event of a large storm. In other words, today's final rule eliminates the 25-year,

24-hour storm permitting exemption for defining a CAFO. EPA notes, however, that the 25-year, 24-hour storm design criterion in the ELGs for large CAFOs is not being changed, except for new sources in the swine, veal, and poultry sectors (*see* preamble section IV.C.2)

What did EPA propose? EPA proposed to eliminate the 25-year, 24-hour storm event exemption from the definition of a CAFO.

What were the key comments? Comments from the animal agriculture industry were generally opposed to eliminating the permit exemption. Their position was that facilities that discharge only as a result of a storm event that exceeds a 25-year, 24-hour storm should not be covered by an NPDES permit. Environmental organizations and others supported the elimination of the exemption based on the position that it was not being used appropriately by the industry. States were split on whether to eliminate the exemption, depending largely on their current regulatory policy. Many commenters confused the proposed elimination of this exemption with consideration of the appropriate design standard for permitted facilities.

The SBAR Panel agreed that removing the 25-year, 24-hour exemption was generally appropriate for Large CAFOs because of the significant potential for environmental harm from Large CAFOs when the manure is not properly managed. The Panel also recognized that, under the terms of the proposal, eliminating the exemption would mean that some facilities would need to apply for a permit even though they have sufficient manure management and containment in place or, for some other reason, do not discharge except in a 25-year, 24-hour storm.

The Panel recommended that EPA consider reduced application requirements for small operators affected by the removal of the exemption. In the proposed rule EPA requested comment on whether to retain this exemption for small facilities as well as how many animals would be considered "small" for this purpose. The Agency carefully analyzed these issues during the development of this final rule.

Rationale. For the reasons stated in the proposal (66 FR 3006), and based on EPA's analysis of comments and other information, the Agency continues to believe that the 25-year, 24-hour storm permit exemption has created confusion and ambiguity that undermines the ability of permitting authorities to implement the CAFO regulations effectively. Eliminating this provision will: (1) Ensure that all Large CAFOs are

appropriately permitted; (2) ensure through permitting that facilities are, in fact, properly designed, constructed, operated, and maintained to contain manure and the rainfall associated with a 25-year, 24-hour storm event or the revised standard for new sources in the swine, veal calf, and poultry sectors; (3) improve the ability of EPA and State permit authorities to monitor compliance; (4) ensure that facilities do not discharge pollutants from their production areas and that they land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, and process wastewater; and (5) achieve EPA's goals of simplifying the regulations, providing clarity to the regulated community, and improving the consistency of implementation.

The 25-year, 24-hour exemption was not applicable to operations that became CAFOs by designation. Since small AFOs can only become CAFOs by designation, the elimination of this exemption will not affect the universe of Small CAFOs (refer to section IV.A.7 for a discussion of designation).

Because EPA is not changing the criteria under which medium facilities are defined as CAFOs, the elimination of the 25-year, 24-hour storm permitting exemption is not expected to significantly affect the universe of Medium CAFOs either. EPA believes that at most medium facilities that meet the existing conditions for being defined as a CAFO, discharges would most likely occur not only in the 25-year, 24-hour storm but as a result of lesser storms as well. For example, a facility with a pipe or other man-made conveyance is likely to discharge to surface water in wet weather, or for that matter could potentially discharge even in dry weather. Similarly, a facility that has a stream or other water of the United States running through the production area meets the definition of a CAFO and is also likely to discharge in less than the 25-year, 24-hour storm. By using the existing criteria, the Agency does not believe that there will be a significant increase in the number of medium facilities defined as CAFOs. Medium facilities that meet these conditions are encouraged to take advantage of available technical support and eliminate the conditions that cause them to be defined as a CAFO.

Accordingly, EPA believes that the Agency has addressed the principal concerns raised by the SBAR Panel. In addition, the Agency has taken steps to reduce the amount of information

required as part of the permit application process, thereby addressing the other concern raised by the Panel.

In providing comments on the proposed rule, a number of commenters appear to have confused EPA's proposal to eliminate the 25-year, 24-hour storm event as a permit exemption with issues relating to the design standard for the effluent limitation guideline. In this final rule, the Agency is eliminating the use of the 25-year, 24-hour storm only for the purpose of determining who is required to be covered by an NPDES permit. The Agency is retaining the existing design standard for containment based on the 25-year, 24-hour storm event (except for new sources in certain animal sectors, as discussed elsewhere in this preamble).

The elimination in today's rule of the 25-year, 24-hour storm exemption from permitting is also compatible with today's requirement for all CAFOs to apply for a NPDES permit. In section IV.B.1 below, EPA explains the reasons for adopting a more comprehensive "duty to apply" today, including the unique characteristics of CAFOs and the zero discharge regulatory approach (except for large storm events) that applies to them, the historical experience showing the lack of permitting of Large CAFOs, and the need to simplify and clarify the applicability of the rule. Retaining the 25-year, 24-hour storm exemption from permitting would not be compatible with these reasons and indeed would perpetuate confusion over which operations are required to apply for a permit.

Having eliminated the 25-year, 24-hour storm exemption from permitting, today's rule nevertheless allows operations to avoid permitting if they can demonstrate that they truly have no potential to discharge (see section IV.B.2). However, operations that do have the potential to discharge, even if just in the 25-year, 24-hour storm, may not receive a determination of no potential to discharge.

5. How Are Land Application Discharges of Manure and Process Wastewaters at CAFOs Covered by This Rule?

Today's rule clarifies that runoff from the application of CAFO manure, litter, or process wastewaters to land that is under the control of a CAFO is a discharge from the CAFO and subject to NPDES permit requirements, except where it is an agricultural storm water discharge. All permits for CAFOs must contain terms and conditions on land application in order to ensure

appropriate control of discharges that are not agricultural storm water.

What did EPA propose? EPA proposed to define an AFO to include both the animal production areas of the operation and any land areas under the control of the owner or operator on which manure and process wastewaters are applied. The definition of a CAFO is based on the AFO definition and therefore would have included the land application areas as well. Accordingly, a CAFO's permit would include requirements to control discharges from both its production area and its land application area.

What were the key comments? A number of commenters asserted that EPA lacks the authority to include permit requirements governing a CAFO's land application of manure and process wastewaters. They claim generally that the runoff from such land application is a nonpoint source discharge and therefore is not subject to NPDES requirements. In particular, they argue that because land application areas are not places where animals are concentrated or fed, there is no basis in the Act for including them in the definitions of AFO and CAFO. In addition, in their view, runoff of CAFO manure and process wastewaters from land application areas is excluded from the point source definition because it is "agricultural storm water." They believe that land application runoff is appropriately addressed only through nonpoint source, voluntary, incentive-based programs. Accordingly, these commenters objected to the proposal to include land application areas in the definition of an AFO and CAFO.

One commenter also stated that EPA's policy reasons for including land application areas in the AFO and CAFO definitions are not convincing. Excluding land application areas from the AFO and CAFO definitions, this commenter notes, does not necessarily mean that CAFO generated manure could be land applied without concern for the environment. For example, as a nonpoint source discharge, land application discharges would still be subject to State controls, the Clean Water Act nonpoint source program (section 319), and the TMDL program.

In contrast, certain other commenters indicated that there is a significant need to better address manure and related discharges from CAFO land application areas and therefore they agreed with the proposal to include the land application areas in the AFO/CAFO definitions. These commenters stated that this approach is consistent with recent court decisions and that addressing land

application runoff is critical to ensuring water quality protection.

Rationale. EPA noted in the proposal that the runoff from land application of manure at CAFOs is a major route of pollutant discharges from CAFOs; that in some regions of the country, the amount of nutrients present in land-applied manure has the potential to exceed the nutrient needs of the crops; that areas exist of widespread phosphorus saturation of the soils; and that research shows a high correlation between areas with impaired lakes, streams and rivers due to nutrient enrichment and areas where there is dense livestock and poultry production.

EPA fundamentally disagrees with those commenters who asserted that the Agency lacks authority over land application discharges at CAFOs because this is an attempt to regulate nonpoint source pollution. Under the Clean Water Act, the Agency has broad discretion to determine what are point source discharges from CAFOs. EPA explained in the proposal why it is appropriate to clearly specify that land application discharges of manure and process wastewater from areas where CAFO manure and process wastewaters have been overapplied are discharges by the CAFO that are subject to NPDES requirements rather than being nonpoint source discharges. In brief, EPA stated in the proposal that the pipes and other manure-spreading equipment that convey CAFO wastes to the fields are an integral part of the CAFO, and so discharges from this equipment should be considered discharges from the CAFO. Further, land application areas are integral to CAFO operations, and there have been significant discharges in the past attributed to land application of CAFO wastes. The proposal noted in addition that defining CAFOs in this way is consistent with EPA's effluent limitations guidelines for other industries, which consider on-site waste treatment systems to be part of the production facilities in that the regulations restrict discharges from the total operation.

EPA believes that, in explicitly including CAFOs in the definition of a point source (CWA Sec. 502(14)), Congress intended that discharges of manure and process wastewater from a CAFO to waters of the U.S. should be regulated through the NPDES permit program. Since one important manner by which CAFOs may produce such discharges is to apply manure and process wastewater to land areas under their control, EPA believes that Congress must have intended discharges from a CAFO's land application area to be at least potentially included as

regulated point source discharges. However, Sec. 502 also includes a specific exclusion from the definition of a point source for "agricultural storm water discharges." EPA explains in the following section how it interprets these two statutory provisions in order to identify which discharges from a CAFO's land application area are agricultural storm water discharges and therefore are not point source discharges.

Because the runoff from land application of manure at CAFOs is a major route of pollutant discharges from CAFOs, and for the other reasons articulated above, EPA does not believe it is sufficient to rely on non-regulatory controls cited by one of the commenters, such as the CWA section 319 program, or State non-NPDES authorities.

While EPA is today making explicit in the regulations that a CAFO's land application of CAFO manure and process wastewaters is subject to NPDES requirements, the Agency is doing so through different regulatory language from what was proposed. EPA proposed to amend the AFO definition to include the land application areas at the facility as well as the animal production areas. Following the proposal, however, concerns were raised that this language could be misconstrued to mean that CAFO permits must include terms and conditions on any pollutants running off the operation's land application areas (for example, runoff of pesticides). This was not EPA's intent. The focus of this rulemaking is on the CAFO manure and process wastewaters that may be discharged by the CAFO. Therefore, EPA has chosen not to include the land application areas at an animal feeding operation within the definition of an AFO or CAFO in the final regulations. Instead, EPA has added section 122.23(e), entitled "Land application discharges from a CAFO are subject to NPDES requirements," which states as follows: "The discharge of manure, litter or process wastewater to waters of the United States from a CAFO as a result of the application of that manure, litter or process wastewater by the CAFO to land areas under its control is a discharge from that CAFO subject to NPDES permit requirements, except where it is an agricultural storm water discharge as provided in 33 U.S.C. 1362(14)." This provision goes on to state that a discharge of manure or process wastewater from a CAFO's land application areas is an agricultural storm water discharge under certain conditions, as discussed in the next preamble section.

The Agency emphasizes that in today's amendments to the CAFO

regulations, a CAFO's responsibility for land application discharges extends only to the CAFO's own land application areas, which includes areas at the CAFO itself or otherwise under the CAFO owner's or operator's control. Also, as noted, today's land application rule provisions apply only to the application of manure, litter, and process wastewaters at the CAFO, and not to other pollutants that may exist at the operation.

As explained above, EPA also believes that the final rules adopted today appropriately account for the exclusion of "agricultural storm water discharges" from the definition of a point source in the Clean Water Act. This subject is discussed in the following section.

6. How Is EPA Applying the Agricultural Storm Water Exemption With Respect to Land Application of CAFO Manure and Process Wastewaters?

EPA is clarifying in today's rule that discharges of manure, litter, and process wastewaters from the land application areas of a CAFO are agricultural storm water discharges where the manure or process wastewater has been applied in accordance with site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure or process wastewater. Such practices, as specified in 122.42(e)(1) (vi)–(ix) must be included in all CAFO permits.

What did EPA propose? For purposes of land application of manure from an AFO or CAFO, EPA proposed to define the term "agricultural storm water discharge" as a discharge composed entirely of storm water, as defined in § 122.26(a)(13), from a land area upon which manure and/or wastewater has been applied in accordance with proper agricultural practices, including land application of manure or wastewater in accordance with either a nitrogen-based or, as required, a phosphorus-based manure application rate. Also, as noted, the proposed effluent guidelines included technology-based requirements for a CAFO's land application areas that were based on the CAFO's use of proper agricultural practices. (See 66 FR at 3029–32).

What were the key comments? A number of the commenters who claimed that EPA does not have authority to regulate land application at CAFOs focused on the exclusion for agricultural storm water discharges. In their view, under this exclusion, all runoff of manure, litter, or process wastewaters from a CAFO's crop fields is exempt from the NPDES program as agricultural storm water. In contrast, other

commenters took the view that because of the Act's specific naming of CAFOs as point sources, none of the runoff from CAFO crop fields is entitled to the agricultural storm water exemption.

Rationale. The CWA states that the term "point source" does not include "agricultural storm water discharges" (section 502(14)). Nothing in the statutory language or legislative history indicates that Congress did not mean to include agricultural storm water discharges from a CAFO in this exclusion. EPA therefore believes that in order to interpret the inclusion of CAFOs as point sources and the agricultural storm water exclusion consistently, it is necessary to identify the conditions under which discharges from the land application area of a CAFO are point source discharges that are subject to NPDES permitting requirements and those under which they are agricultural storm water discharges and therefore are not point source discharges.

EPA has determined that it is appropriate to base the distinction between agricultural storm water discharges and regulated point source discharges of manure, litter, and process wastewater from a CAFO on whether or not the manure and process wastewater has been applied in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure or process wastewater. The specific types of practices that EPA believes are needed to ensure this are specified in 122.42(e) (1)(vi)–(ix). Where such practices have been used, EPA believes it is reasonable to conclude that any remaining discharge is agricultural storm water. Conversely, where such practices have not been used, EPA believes it is reasonable to conclude that land application discharges of manure, litter, or process wastewater are not agricultural storm water but are discharges that Congress meant to subject to NPDES permitting requirements when it explicitly included CAFOs in the definition of a point source.

When manure or process wastewater is applied in accordance with practices designed to ensure appropriate agricultural utilization of nutrients, it is a beneficial agricultural production input. This fulfills an important agricultural purpose, namely the fertilization of crops, and it does so in a way that minimizes the potential for a subsequent discharge of pollutants to waters of the U.S. EPA recognizes that even when the manure, litter, or process wastewater is land applied in accordance with practices designed to

ensure appropriate agricultural utilization of nutrients, some runoff of nutrients may occur during rainfall events, but EPA believes that this potential will be minimized and any remaining runoff can reasonably be considered an agricultural storm water discharge.

EPA notes that any dry weather discharge of manure or process wastewater resulting from its application to land area under the control of a CAFO would not be considered an agricultural storm water discharge and would thus be subject to Clean Water Act requirements. As a matter of common sense, only storm water can be agricultural storm water. Further, if manure or process wastewater were applied so thickly that it ran off into surface waters even during dry weather, this would not be consistent with practices designed to ensure appropriate agricultural utilization of nutrients.

In this rule, EPA is clarifying how it believes the scope of regulated point source discharges from a CAFO is limited by the agricultural storm water exemption. EPA does not intend its discussion of how the scope of point source discharges from a CAFO is limited by the agricultural storm water exemption to apply to discharges that do not occur as the result of land application of manure, litter, or process wastewater by a CAFO to land areas under its control and are thus not at least potentially CAFO point source discharges. In explaining how the scope of CAFO point source discharges is limited by the agricultural storm water exemption, EPA intends that this limitation will provide a "floor" for CAFOs that will ensure that, where a CAFO is land applying manure, litter, or process wastewater in accordance with site specific practices designed to ensure appropriate agricultural utilization of nutrients, no further effluent limitations will be authorized, for example, to ensure compliance with water quality standards. Any remaining discharge of manure or process wastewaters would be covered by the agricultural storm water exemption and would be considered nonpoint source runoff. Further, the Agency does not intend that the limitation on the scope of CAFO point source discharges provided by the agricultural storm water exemption be in any way constrained, so long as manure, litter, or process wastewater is land applied by the CAFO in accordance with site specific nutrient management practices that ensure appropriate utilization of nutrients. In particular, EPA does not intend that the applicability of the agricultural storm

water exemption to discharges from land application areas of a CAFO be constrained by requirements to control runoff resulting from the application of pesticides or other agricultural practices.

Although as noted above, manure and process wastewater discharges from the land application area are not directly subject to water quality-based effluent limits, EPA encourages States to address water quality protection issues in their technical standards for determining appropriate land application practices.

The Agency disagrees with the commenters who would interpret the agricultural storm water provision to exclude all of the runoff from a CAFO's land application areas. It would not be reasonable to believe that Congress intended to exclude as an "agricultural" storm water discharge any and all discharges of CAFO manure from land application areas, for example, no matter how excessively such manure may have been applied without regard to true agricultural needs. Similarly, EPA does not agree with the commenters who believe that the agricultural storm water discharge exclusion does not apply at all to CAFOs because Congress singled out CAFOs by specifically including them in the definition of point source. There is nothing in the text of the point source definition (CWA section 502(14)) that indicates that Congress intended the agricultural storm water discharge exclusion not to apply to CAFOs.

After considering all the comments, EPA has decided that it is not necessary to include a definition of the term "agricultural storm water" in the rule text at section 122.23(b). EPA believes that the amended regulatory text at 40 CFR 122.23(e), in combination with this preamble discussion, adequately clarifies the distinction between regulated point source discharges and non-regulated agricultural storm water discharges from the land application area of a CAFO.

Under the final rule, as proposed, discharges from the production area at the CAFO (e.g., the feedlot and lagoons) are not eligible for the agricultural storm water exemption at all, because they involve the type of industrial activity that originally led Congress to single out CAFOs as point sources.

Today's final rule also requires all permits for CAFOs to include terms and conditions to address land application. See section 122.42(e) and Part 412. The Agency has included this requirement because it has the authority to regulate point source discharges and any discharge of CAFO manure, litter, or process wastewaters from the land

application area of a CAFO which is not agricultural storm water is subject to the Clean Water Act. EPA believes that the only way to ensure that non-permitted point source discharges of manure, litter or process wastewaters from CAFOs do not occur is to require that CAFOs apply for NPDES permits that will establish requirements that ensure that manure, litter, and process wastewater are only applied to CAFO land application areas in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater.

7. When and How Is an AFO Designated as a CAFO?

In today's final rule, EPA is retaining the requirement for an on-site inspection and a determination that an AFO is a significant contributor of pollutants to waters of the United States prior to designating an AFO as a CAFO. A small AFO may be designated only if it discharges either: (1) into waters of the United States through a man-made ditch, flushing system, or other similar man-made device or (2) directly into waters of the United States that originate outside of the facility and pass over, across, or through the facility or otherwise come into contact with the confined animals. Medium operations may also be designated as CAFOs even if they do not meet either of the two conditions for being defined as a CAFO.

What did EPA propose? In the proposed rule, EPA presented two options with respect to the designation criteria. EPA proposed to retain the existing criteria under a three-tier structure and proposed to eliminate them under a two-tier structure. In addition, EPA requested comment on several additional alternatives that would have retained the criteria only for small operations.

EPA also proposed to modify the on-site inspection requirement to explicitly include other forms of information gathering such as use of monitoring data, fly-overs, and satellite imagery. EPA also proposed a technical correction, changing the term "significant contributor of *pollution*" to "significant contributor of *pollutants*."

What were the key comments? EPA received limited comment concerning proposed changes to the designation criteria. Only a few States specifically supported the elimination of the criteria. A few representatives of the livestock industry generally supported elimination of the criteria for operations of all sizes. Commenters were generally opposed to EPA's proposal to modify the on-site inspection requirement to

allow for alternative data gathering methods. Some commenters acknowledged that the alternative methods of data collection proposed by EPA can indicate situations where a potential water quality problem exists; however, most commenters asserted that on-site inspections by knowledgeable personnel are the only fair and accurate method of determining whether an AFO is a significant contributor of pollutants.

The SBAR Panel raised concern over the proposed changes to the designation criteria, and the potential to cause more small businesses to be subject to regulation. The Panel supported the retention of the existing designation criteria and process.

Rationale. EPA has decided to retain the existing designation criteria and process because the existing criteria strike an appropriate balance for ensuring protection of surface water quality while maintaining flexibility for States to assist small and medium operations before they become subject to NPDES requirements for CAFOs.

Retaining the requirement for an on-site inspection will help ensure a reasoned assessment of the situation has been performed and make the operation aware that it may be designated a CAFO.

AFOs that do not meet the regulatory definition of a CAFO can often be effectively addressed by State voluntary programs or regulatory non-NPDES programs focused on the elimination of the conditions that pose a threat to water quality. Implementing these voluntary or non-NPDES State programs can help to ensure that medium and small operations implement proper practices and are not designated as CAFOs. If documented threats to water quality are not addressed by the owner or operator of particular AFOs, the NPDES CAFO regulations provide States with appropriate flexibility to use designation as an effective mechanism to designate these operations as CAFOs on a case-by-case basis. Once designated as CAFOs, these operations are subject to the permitting requirements defined in today's action. Note that the ELGs apply only to Large CAFOs. For Medium and Small CAFOs appropriate permit limits should be established according to the BPJ of the permitting authority.

Although no change has been made to either the former designation criteria or the requirement for an on-site inspection, EPA is adopting as final a technical correction to the regulatory language on designation, changing the term from "significant contributor of pollution" to "significant contributor of pollutants." for the reasons discussed in the proposal. This technical correction

makes the NPDES CAFO regulations consistent with the rest of the NPDES program. EPA received very few public comments on this revision.

If, after conducting an on-site inspection, the NPDES authorized State (or EPA in certain circumstances—see below) determines that an AFO is a significant contributor of pollutants to waters of the United States, the AFO may be designated as a CAFO. The determination of whether an AFO is a significant contributor of pollutants to waters of the United States should consider the cumulative impacts of multiple AFOs that may be causing or contributing to the exceedance of water quality standards.

8. Can EPA Designate an AFO as a CAFO Where the State Is the Permitting Authority?

Today's final rule explicitly authorizes the EPA Regional Administrator to designate CAFOs in NPDES authorized States where the Regional Administrator has determined that one or more pollutants in the AFO's discharge contributes to an impairment in a downstream or adjacent State or Indian country water that is impaired for that pollutant. Upon designation, the operation would be required to apply to the appropriate permitting authority for permit coverage. It should be noted that EPA is not assuming authority or jurisdiction to issue permits to the CAFOs that it designates in authorized NPDES States (except for those in Indian Country). That authority would remain with the authorized States.

What did EPA propose? EPA proposed to explicitly authorize EPA designation of AFOs as CAFOs in NPDES authorized States, without limiting this authority to AFOs contributing to impairments in downstream or adjacent jurisdictions.

What were the key comments? In comments submitted on the proposed rule, States and the livestock and poultry industry were generally opposed to EPA designation in NPDES authorized States. A number of commenters argued that EPA did not have the authority to designate in a State with an authorized NPDES permit program. Environmental organizations and allied commenters were generally supportive of EPA's designation authority. Those supportive of EPA's proposal believed that this authority would be an important component of ensuring that the revised regulations are fairly implemented across the entire country.

Rationale. After careful consideration of the comments, EPA has decided to limit EPA designation authority, in

NPDES authorized States, to circumstances where the Regional Administrator has determined that one or more pollutants in the AFO's discharge contributes to an impairment in a downstream or adjacent State or Indian country water that is impaired for that pollutant. In these situations, the State in which the discharge is located may not have the same incentives for designating sources as it would if the impaired water affected by the discharger were located in the State. This approach will ensure consistent implementation of designation requirements across State boundaries where there are serious water quality concerns. EPA expects NPDES authorized States to ensure consistency within State boundaries. It is not EPA's intention to make such designations lightly or without close coordination with affected States. EPA's designation authority will be helpful in sensitive situations where one State finds it difficult to resolve water quality impairments caused by AFOs in another State.

EPA disagrees with those commenters who believe that the Agency does not have the legal authority to designate CAFOs in authorized States. In today's action, EPA is asserting similar, albeit more limited, authority to designate CAFOs as compared to designation of storm water point sources. See 40 CFR 122.26(a)(1)(v) and 122.26(a)(9).

Ultimately, EPA's authority to designate derives from the CWA itself. CWA Section 501(a) provides the Agency with the authority to designate point sources subject to regulation under the NPDES program, even in States approved to administer the NPDES permit program. This interpretive authority to define point sources and nonpoint sources was recognized by the D.C. Circuit in *NRDC v. Costle*, 568 F.2d 1369, 1377 (DC Cir. 1977). The interpretive authority arises from CWA Section 501(a) when EPA interprets the term "point source" at CWA Section 502(14).

9. How Can States Use Non-NPDES Programs To Prevent Medium and Small Operations From Being Defined or Designated as CAFOs?

EPA promotes the efforts of States to actively use a variety of strategies to work with owners and operators of AFOs to ensure that they do not meet the criteria that would result in their being defined or designated Small or Medium CAFOs.

Operators of medium and small facilities are encouraged to participate in voluntary programs that promote sustainable agriculture and the

reduction of environmental impacts. EPA anticipates that participation in these programs will assist them in eliminating conditions which would result in the AFO being defined or designated as a CAFO. For example, it may be that an operation that confines 500 cattle and that participates in a voluntary program to develop and implement a CNMP, as defined by USDA, could proactively fix situations that may otherwise cause them to meet the criteria for being defined or designated as a CAFO. EPA intends to develop a small entity compliance guide to assist small business and additional tools needed to assist AFOs in complying with this requirement. Please refer to a more extensive discussion of how this rule promotes and encourages State flexibility in section V.F.

10. What CAFOs Are New Sources?

Today's final rule makes no changes to the definition of "new source" in 40 CFR 122.2 or the definition and criteria for new source determinations in 40 CFR 122.29 with respect to CAFOs. For purposes of applying the new source performance standards in today's final rule, a source would be a new source if it commences construction after April 14, 2003 (see 40 CFR 122.2). Each source that meets this definition is required to achieve the new New Source Performance Standard upon commencing discharge.

What did EPA propose? EPA proposed additional criteria for determining who is a new source, including:

1. The CAFO is constructed at a site at which no other source is located;
2. The CAFO totally replaces the housing including animal holding areas, exercise yards, and feedlot, waste handling system, production process, or production equipment that causes the discharge or potential to discharge pollutants at an existing source; or
3. The CAFO constructs a production area that is substantially independent of an existing source at the same site.

What are the key comments? Some industry commenters expressed the view that the new source definitions were too broad and would result in many existing CAFOs being considered by their permitting authority as new sources. Commenters interpreted the proposal to mean that operations undergoing routine operation and maintenance or replacement of individual structures and equipment could be considered a new source under the proposed language. These existing facilities defined as new would have to undergo costly improvements to comply with the NSPS. In addition, the new

source definition would be a disincentive to conduct routine maintenance and improvements at an operation. The commenters indicated that EPA did not provide enough rationale to include this language and that other industries do not have such a broad new source definition. Industry commenters, including some conservation districts, concluded that EPA should retain the existing definition.

Comments from environmental organizations and private citizens indicated their belief that all expanding AFOs should be considered CAFOs and subject to NSPS, and that these standards should be more restrictive than the existing source standards.

Rationale. After reviewing public comment and reconsidering this proposed revision, EPA has concluded that the existing regulation at § 122.29(b) provides adequate criteria for determining who is a new source. EPA's intention was to provide permit writers with clear and specific criteria applicable to CAFOs to improve clarity of these regulations. In retrospect, the only clarification that was provided was related to § 122.29(b)(ii), which refers to when the new construction "totally replaces the process or production equipment that causes the discharge of pollutants at an existing source." While the Agency disagrees with commenters that the proposed revisions would expand the scope of the existing regulation, EPA decided that it was not necessary to adopt the proposal as the existing regulation is sufficient for EPA to provide guidance on determining new sources. Further, EPA is not adopting the proposal in the interest of keeping the regulation simple. Nevertheless, EPA believes some clarity as to which CAFOs are new sources is appropriate. In response to commenters who believe that EPA should consider any facility that expands to be a new source, EPA did not propose such a definition, the reasons for which are discussed at 66 FR 3066 of the proposed rulemaking. EPA is clarifying that it is not the intent of this section to serve as a disincentive to CAFOs to maintain, upgrade, or otherwise enhance facilities and waste management systems to improve their operational and environmental performance. Thus, EPA is clarifying that an expanding source is not automatically defined as a new source. For example, a facility that expands its operation by simply extending existing housing structures by constructing new housing adjacent to existing housing, is not typically considered a new source. Under existing provisions at § 122.29(b) such

expansions at an existing facility would not result in the facility becoming defined as a new source unless the modifications totally replace the process or production equipment that causes the discharge of pollutants, or the new/modified facility's production and waste handling processes are substantially independent of the preexisting source.

B. Who Needs a Permit and When?

1. Who Needs To Seek Coverage Under an NPDES Permit?

Today's rule requires all CAFO owners or operators to seek coverage under an NPDES permit, except in very limited situations where they make an affirmative demonstration of "no potential to discharge," as discussed below. This "duty to apply" applies without exception; it makes no difference, for example, whether the CAFO manure management system has been appropriately designed and operated to prevent discharges except during large storm events. Recognizing that there may be certain situations in which no reasonable potential to discharge exists, EPA has also established the ability for a CAFO owner or operator to demonstrate that the facility has no potential to discharge from either its production areas or its land application areas. If the permitting authority agrees with the demonstration of no potential to discharge, the operation would not need to obtain an NPDES permit. The no potential to discharge demonstration is not relevant to small or medium operations because an actual discharge is a required criterion for a small or medium operation to be considered a CAFO.

What did EPA propose? EPA proposed to require all CAFOs to seek coverage under an NPDES permit, except where they can demonstrate no potential to discharge.

What were the key comments? Environmental groups were largely in favor of the duty to apply provision, and sought to ensure that all Large CAFOs in particular had a duty to apply. These commenters expressed concern about the impacts of unregulated operations, the potential for CAFOs to discharge, and the lack of permitting of CAFOs under the current regulations. Many commenters stated that because of the potential to discharge CAFOs should have NPDES permits.

Trade associations and industry commenters were largely opposed to the duty to apply requirement. A number of these commenters questioned EPA's legal authority for requiring permit applications from CAFOs that claim not to discharge. They argued that the Clean

Water Act requires an NPDES permit only for an actual discharge of pollutants to the waters of the United States. Commenters also noted that imposing a duty to apply is inconsistent with EPA's past interpretations of the Clean Water Act, pointing to past instances in which EPA has stated that permits are required only for actual discharges.

An industry commenter also disagreed with EPA's reasons for finding that there is a need to impose a duty to apply for a permit for CAFOs. The commenter disagreed with EPA's belief that many large AFOs have not applied for permits because of widespread confusion over the CAFO regulatory requirements and stated that any confusion in the regulations can easily be remedied by EPA. The commenter noted that there could be other reasons these operations are not permitted (for example, the operation does not discharge, it discharges only in a 25-year, 24-hour storm, or is a dry poultry facility). Commenters also questioned EPA's finding that many CAFOs are discharging without a permit and stated their belief that CAFO discharges are no more intermittent (and thus no more difficult to detect and document) than those in other industries.

These commenters also asserted that EPA is not authorized and not justified in putting the burden on the CAFO to show that it does not discharge. According to the commenters, this presumption of a discharge weakens the requirement of an actual discharge in the Act and will result in EPA regulating facilities that Congress intended to exclude from the NPDES program.

State comments were mixed. Most supported the duty to apply provision, including the no potential to discharge determination, agreeing with EPA that any operation that meets the definition of a CAFO should be required to apply for a permit. Some States indicated that the criteria for becoming a CAFO needed to be clear, and then facilities would know when they are CAFOs and would comply with the duty to apply. Other States opposed this proposal for a variety of reasons, including that shifting the burden of proof to the facility would be onerous, especially if EPA lowers the regulatory threshold; that there was no need to impose a permit in order to ensure that livestock operations have nutrient management plans; and that EPA should not create duplicative efforts in States with effective programs.

Although the SBAR Panel did not comment on the proposed duty to apply requirements, the Panel did comment

on EPA's proposal to require all medium facilities either to certify that they are not CAFOs or to seek coverage under an NPDES permit. The Panel recommended that EPA carefully consider the burden of such requirements. The Panel also was concerned that requiring full permit applications from the number of Medium CAFOs contemplated at proposal may impose a significant burden with limited environmental benefits, and recommended that EPA carefully consider appropriate streamlining options. Finally, the SBAR Panel recommended that, before adding any new application or certification requirements for operators in this size range, EPA should carefully weigh the burden and environmental benefits of expanding the scope of the regulations in this way.

Rationale. After careful consideration of the comments, EPA is adopting the "duty to apply" in today's final regulations. This revised duty to apply is designed to identify and ultimately to prevent actual unauthorized discharges to the waters of the United States, consistent with the intent and goals of the Clean Water Act. CAFOs that demonstrate that they do not have a potential to discharge will not need to seek coverage under a permit, as discussed in section IV.B.2 of this preamble.

EPA continues to believe that there is a strong need and a sound basis for adopting this duty to apply and that it is within the Agency's authority to do so. EPA fully discussed its rationale for this provision in the proposal. There, the Agency discussed the duty for CAFOs, other than those which discharge only in the event of a 25-year, 24-hour storm, to apply for a permit under the existing NPDES regulations (40 CFR 122.21(a)) and explained a number of reasons behind the need for a clarified and more broadly applicable duty to apply for CAFOs.

EPA disagrees with the comment that there is no need for a duty to apply because there may be legitimate reasons for so many operations being unpermitted at present. In fact, there are numerous documented instances in the administrative record of actual discharges at unpermitted CAFOs that are not associated with 25-year, 24-hour storms. EPA also disagrees that CAFO discharges are no more intermittent than those in other industries. Operations in other industries are typically designed to routinely discharge after appropriate treatment; this is not the case at CAFOs, where discharges are largely unplanned and intermittent. It is thus much easier for CAFOs to avoid permitting by not

reporting their discharges. EPA continues to believe that imposing a duty to apply for all CAFOs is appropriate given that the current regulatory requirements are being misinterpreted or ignored. Moreover, simply clarifying the regulations would not necessarily be adequate, because operations might still claim that the Clean Water Act requires no permit application if the facility claims not to discharge. As discussed in the proposal, Congress contemplated that EPA could set effluent standards at zero discharge, where appropriate, and that EPA would effectuate these standards through permits; this statutory scheme would be negated if CAFOs were allowed to avoid permitting by claiming that they already meet a zero discharge standard.

EPA noted in the proposal that it had not previously sought to categorically adopt a duty to apply for an NPDES permit for all facilities within a particular industrial sector. The Agency explained that it is doing so for reasons that involve the unique characteristics of CAFOs and the zero discharge regulatory approach (except for large storm events) that applies to them. EPA also noted that since the inception of the NPDES permitting program in the 1970s, only a small number of Large CAFOs have actually sought permits. The Agency is adopting this revised duty to apply for all of these reasons, including this historical experience showing the lack of permitting of Large CAFOs, while numerous documented discharges occurred over time. This change also serves to substantially simplify and clarify the applicability of the rule.

In addition, there is a sound basis in the administrative record for the presumption that all CAFOs have a potential to discharge to the waters of the United States such that they should be required to apply for a permit, unless they can show no potential to discharge. EPA does not agree with the claim that the presumption of a discharge will weaken the requirement of an actual discharge in the Clean Water Act and will result in EPA regulating facilities that Congress intended to exclude from the NPDES program. CAFOs will have the opportunity to demonstrate that they do not have a potential to discharge and therefore would not be required to apply for a permit.

2. How Can a CAFO Make a Demonstration of No Potential To Discharge?

Today's rule specifies that a Large CAFO need not have an NPDES permit if the permitting authority finds that the operation has no potential to discharge.

This final rule provides that Large CAFOs may request and submit technical information as the basis for a permitting authority to determine that there is no potential to discharge. Today's rule also establishes requirements for the permitting authority to issue a public notice that such a request has been received. The request for a no potential to discharge determination must be submitted by the date upon which the CAFO is required to seek permit coverage (*See* 40 CFR 122.23(g) and section IV.B.3 and Table 4.2 of this preamble). Within 90 days of receiving the request, the Director will let the CAFO know whether or not the request for a no potential to discharge determination has been granted. If the request is denied, the CAFO must seek permit coverage within 30 days after the denial.

What did EPA propose? EPA proposed that Large CAFOs have a duty to apply for an NPDES permit unless the permitting authority, upon request from the CAFO, makes a case-specific determination that a CAFO has no potential to discharge pollutants to water of the United States.

What were the key comments? Trade associations and industry commenters generally opposed the requirement to demonstrate "no potential to discharge." Their objections largely follow from their view that CAFOs should not be required to apply for a permit in the first instance absent evidence of an actual discharge. Having to show "no potential to discharge" in order to avoid a permit would place a difficult or impossible burden on operations to prove a negative, in their view. They also expressed concerns over the resources and expense of showing "no potential to discharge" and about how permitting authorities will be able to interpret and apply this standard consistently. Certain environmental groups, on the other hand, were also opposed to this provision, but their view is that CAFOs should be required to apply for permits without exception, and there should be no allowance for CAFOs to avoid permitting based on a finding of "no potential to discharge." They also voiced concerns that this provision will invite abuse by States that seek to avoid permitting responsibilities. On the subject of whether the rules should include a public process for the "no potential to discharge" determination, public commenters expressed views both for and against including this process. Those seeking to have a public process included their belief that it will serve as a check against any abuses in making these determinations.

Rationale. Today's rule requires all CAFOs to apply for a permit unless they have received a determination by the Director that the facility has "no potential to discharge." The "duty to apply" provision is based on the presumption that every CAFO has a potential to discharge and therefore must seek coverage under an NPDES permit. However, the Agency does not agree with commenters that there should be no opportunity to rebut this presumption and avoid permitting because EPA recognizes that, although they may be infrequent, there may be instances where a CAFO truly does not have a potential to discharge. For example, the CAFO may have no potential to discharge because it is located at a great distance from any water of the United States (*see* further discussion on this subject below). In such circumstances, it would make little sense to impose NPDES permit requirements in order to protect against such discharges. Therefore, the Agency believes that it is reasonable to allow facilities that demonstrate "no potential to discharge" to be released from the requirement to seek coverage under an NPDES permit. Although today's regulation allows facilities to submit "no potential to discharge" claims, an unpermitted CAFO that does in fact discharge pollutants to waters of the U.S., with or without a determination of "no potential to discharge," would be in violation of the Clean Water Act.

The requirement for demonstrating no potential to discharge is not being extended to small and medium AFOs since the specific criteria that must be met prior to becoming CAFOs requires the existence of a discharge. Whereas large AFOs are defined as CAFOs based on number of animals alone, small and medium AFOs only become CAFOs after meeting specific discharge-related criteria. A small AFO can only be designated as a CAFO by the State Director or Regional Administrator where it is determined that it is a significant contributor of pollutants to waters of the U.S. A medium AFO can become a CAFO by designation or definition. As in the case of small AFOs, a medium AFO can only be designated where it is determined to be a significant contributor of pollutants to waters of the United States. A medium AFO that is a CAFO by definition must meet one of the two "method of discharge" criteria prior to being defined as a CAFO. Thus, it is meaningless to consider such facilities as having no potential to discharge.

EPA's intention is that the term "no potential to discharge" is to be narrowly interpreted and applied by permitting

authorities. This provision is intended to be a high bar that excludes those Large CAFOs from having an NPDES permit only where the CAFO can demonstrate to a degree of certainty that they have no potential to discharge to the waters of the United States. The no potential to discharge status is intended to provide relief where there truly is no potential for a CAFO's manure or wastewater to reach waters of the United States under any circumstances or conditions. Such circumstances would include, for example, CAFOs that are located in arid areas and far from any water body or those that have completely closed cycle systems for managing their wastes and that do not land apply their wastes. For example, a CAFO that meets the following conditions might be able to demonstrate no potential to discharge: (1) Located in an arid or semi-arid environment; (2) stores all its manure or litter in a permanent covered containment structure that prevents wind dispersal and precipitation from contacting the manure or litter; (3) has sufficient containment to hold all process wastewater and contaminated storm water and (4) does not land apply CAFO manure or litter because, for example, the CAFO sends all its manure or litter to a regulated, offsite fertilizer plant or composting facility. In particular, EPA believes that land application of its manure and wastewater would, in most cases, be enough by itself to indicate that a CAFO does have a potential to discharge (although conceivably no potential to discharge could be shown based on the physical features of the site, such as lack of proximity to waters of the United States). This discussion should help to address commenters concerns that there could be inconsistencies in how permitting authorities could interpret and apply the standard for "no potential to discharge".

The term "no potential to discharge" means that there is no potential for any CAFO manure, litter, or wastewater to be added to waters of the United States from an operation's production or land application areas, without qualification. If a Large CAFO chooses to make a demonstration of no potential to discharge, it is the CAFO's responsibility to provide appropriate supporting information that the permitting authority can use when reviewing the demonstration. The supporting information should include, for example, a detailed description of the types of containment used for manure focusing on the attributes of the containment that ensure no discharges

will occur. In addition, there may be instances where after preliminary review of the demonstration, the permitting authority may require the submission of supplemental information to assist in making a determination.

EPA disagrees with commenters' statements that the demonstration of "no potential to discharge" will place an impossible or excessively costly burden on facilities. EPA believes that, in many instances, the information that is specified in 40 CFR 122.23(f)(2) will be adequate for the Director to determine whether or not the facility has a potential to discharge. In such instances, there would be no greater cost to the facility than if it were to apply for a permit. If additional information is necessary, the Agency does not believe that it will result in greatly increased costs, because such information (including, for example, design specifications or other technical information) would be readily available to the facility and could be easily provided to the permitting authority.

Today's rule requires that a request for a no potential to discharge determination include most of the information required for a permit application, as specified in § 122.21(f) and (i)(1)(i) through (ix). This information will serve as the primary source of information relating to the facility's qualifications to avoid an NPDES permit. While some additional information may be available to the Director, including for example regional rainfall, soil, and hydrological conditions, the Director may require supplemental, site-specific information to make this determination. However, EPA is not requiring a CAFO owner or operator pursuing a no potential to discharge determination to certify to the development of its nutrient management plan, as required by § 122.21(i)(1)(x) for a CAFO that seeks permit coverage after December 31, 2006.

Within 90 days of receiving a request for a no potential to discharge

determination the permitting authority will notify the CAFO of its decision on the request. During this review period, a CAFO that has submitted a request for a no potential to discharge determination does not have a duty to seek coverage under an NPDES permit. The final rule differs from the proposal in not imposing a duty to apply on CAFOs that have submitted a no potential to discharge request until there is a denial of the request by the Director. EPA believes that this is a preferable approach, because it does not risk the imposition of NPDES permit requirements on CAFOs even though they may qualify for a determination that they have no potential to discharge. To guard against abuse of this provision, the Agency is establishing a limited time of 90 days for the Director to make its determination.

If the permitting authority finds that no potential to discharge has not been demonstrated, the CAFO owner or operator must seek permit coverage within 30 days of the denial of the request. States may use the information submitted with the request for a no potential to discharge determination to proceed with individual permit development or for coverage under a general permit. However, in order to obtain coverage, the CAFO owner or operator would also be required to provide a request for coverage and include the information required by § 122.21(i)(1)(x), when applicable.

After all necessary information is submitted, and before making a final decision to grant a "no potential to discharge" determination, today's rule requires the Director to issue a public notice stating that a no potential to discharge request has been received. This notice must be accompanied by a fact sheet which includes, when applicable: (1) A brief description of the type of facility or activity which is the subject of the no potential to discharge determination; (2) a brief summary of the factual basis, upon which the

request is based, for granting the no potential to discharge determination; and (3) a description of the procedures for reaching a final decision on the no potential to discharge determination. The Director must base the decision to grant a no potential to discharge determination on the administrative record, which includes all information submitted in support of a no potential to discharge determination and any other supporting data gathered by the permitting authority. If the Director's final decision is to deny the "no potential to discharge" determination, the CAFO owner or operator must submit a permit application within 30 days after denial of the no potential to discharge determination.

The Agency believes that the process described above addresses concerns raised by commenters that States might abuse the intended effect of this provision and allow facilities that should be permitted as CAFOs to avoid permitting. The Agency believes this process should ensure that the Director has adequate information to properly decide whether a facility has a potential to discharge or not, and also ensures that the public will be made aware of such determinations and can act appropriately if it appears that determinations are not being made as required by this provision. Also, as noted above, facilities that actually do discharge without a permit are subject to enforcement for a violation of the Clean Water Act—even if they have previously received a no potential to discharge determination. This should provide a strong incentive to CAFOs not to file a frivolous request.

3. When Must CAFOs Seek Coverage Under a NPDES Permit?

Table 4.2 summarizes the time frames by which CAFOs (existing and new sources) must apply for an NPDES permit. Refer to section IV.A.11 of this preamble for a discussion of the new source definition.

TABLE 4.2.—TIME FOR SEEKING COVERAGE UNDER AN NPDES PERMIT

CAFO status	Time frame to seek coverage under an NPDES permit	Examples
Operations defined as CAFOs prior to April 14, 2003.	Must have applied by the date required in 40 CFR 122.21(c).	Operations that previously met the definition of a CAFO and were not entitled to the 25-year, 24-hour storm permit exemption.
Operations defined as CAFOs as of April 14, 2003, and that were not defined as CAFOs prior to that date (e.g. existing operations that become defined as a CAFO as a result of changes in this rule).	As specified by the permitting authority, but no later than April 13, 2006.	For example, "dry" chicken operations (operations that did not use a liquid manure handling or continuous overflow watering system), stand-alone immature swine, heifer and calf operations, and those AFOs that were entitled to the permitting exemption for discharging only in the event of a 25-year, 24-hour storm.

TABLE 4.2.—TIME FOR SEEKING COVERAGE UNDER AN NPDES PERMIT—Continued

CAFO status	Time frame to seek coverage under an NPDES permit	Examples
Operations that become defined as CAFOs after April 14, 2003, but which are not new sources.	(a) newly constructed operations: 180 days prior to the time the CAFO commences operation; (b) other operations (e.g. increase in number of animals): As soon as possible but no later than 90 days after becoming defined as a CAFO, except that, if the operational change that causes the operation to be defined as a CAFO would not have caused it to be defined as a CAFO prior to April 14, 2003, the operation must apply no later than April 13, 2006 or 90 days after becoming defined as a CAFO, whichever is later.	For example, an AFO that increases the number of animals in confinement to a level that would result in the operation becoming defined as a CAFO.
New sources	180 days prior to the time the CAFO commences operation.	For example, a new Large CAFO that commences construction after April 14, 2003.
Designated CAFOs	90 days after receiving notice of designation.	

What did EPA propose? The Agency proposed to delay the effective date of the revised definition of a CAFO until three years from the date of publication of the final rule, and thereby delay the date by which permits would be required for newly defined CAFOs until three years after the date of the final rule. During that three-year interim period, the Agency proposed that the existing CAFO definition would remain in effect. For example, prior to the effective date of the revised CAFO definition, the revised new source and new discharger provisions would apply only to those facilities meeting the definition of a CAFO under the existing regulatory definition. For designated CAFOs, EPA proposed that the CAFO must apply for a permit within 90 days of being designated.

What were the key comments? Some commenters felt that extending the time for compliance allowed too much time for implementation of the new regulations, and would only result in further delays in addressing the problems associated with discharges from CAFOs. Other commenters took the view that three years is too little time for States or industry to meet the new requirements, from either a technical or economic standpoint. Most of those who commented on this issue sought clarity in setting the effective dates for the regulations.

Rationale. In today's rule, EPA is establishing time frames for seeking coverage under a permit that are appropriate to the various categories of CAFOs, depending upon their status with respect to the effective date of the rule.

For the reasons discussed in Section IX of the preamble to the proposed rule, the Agency does not believe that it would be reasonable to require permit

coverage for all CAFOs immediately on the effective date of this rule. Following issuance of today's rule, 40 CFR 123.62 provides authorized States with time to revise their State NPDES programs (one year or two years if statutory changes are needed). Further, most States will need approximately an additional year to develop a general permit, publish a draft of the general permit for public comment, and issue a final general permit for the many CAFOs that EPA expects to be covered under a general permit. EPA believes that a three-year time frame for newly defined CAFOs to obtain permit coverage is reasonable and justified based on the requirements of 40 CFR 123.62, together with the need to develop and issue general permits, and for the reasons stated below.

Today's rule is likely to result in fewer facilities being defined as CAFOs than anticipated at the time of proposal. Because States will not need to address concerns associated with identifying, permitting, and ensuring compliance by the large number of medium-size facilities anticipated as potential CAFOs at the time of proposal, EPA does not believe that concerns that States would need more than three years to meet the new requirements are justified.

The Agency is, however, changing its approach to achieve the proposed time frame for requiring CAFOs to seek coverage under a permit. Rather than delaying the effective date for the definition of a CAFO, as was proposed, EPA is simply establishing a three-year time frame for when newly defined CAFOs must seek coverage under a permit.

Today's approach is consistent with Congressional intent in the 1972 Clean Water Act. Today's rule marks the first time in many years, except in the case

of storm water sources, that the Agency is revising the scope of the term point source to include additional facilities under the definition. In the 1972 Clean Water Act, Congress provided more than two years for point sources to obtain coverage under a permit (§ 402(k)). Similarly, in this instance, EPA believes that Congress would have intended for the Agency to provide additional time for these newly covered sources to obtain permit coverage. This additional time is necessary for States to revise their regulations and to develop and issue permits, and it provides facilities some time to take the necessary steps to comply with these new requirements.

Moreover, EPA believes that there will be other advantages as a result of the approach taken in today's rule. The first is to avoid the confusion that would be associated with having different and conflicting definitions of a CAFO present simultaneously in the Code of Federal Regulations, which would be the case if EPA were to promulgate a revised definition of CAFO but delay the effective date of the definition for three years. The second is to encourage States to issue new permits and cover newly defined CAFOs as soon as possible within the time period specified. CAFOs are encouraged to seek coverage under a permit once general permits addressing those facilities are available. A third reason is that this approach is consistent with EPA's approach when the Agency promulgated the storm water phase II regulations, although those regulations were based on a somewhat different statutory foundation.

For all of the reasons stated above, the Agency is exercising its discretion to define these newly regulated facilities as point sources, while delaying their duty

to apply for a permit until three years from the effective date of today's rule.

Today's rule does not extend the date by which operations that were defined as CAFOs under the prior regulations should have applied for a permit (see 40 CFR 122.21). In particular, EPA notes that those operations that previously met the criteria for being a CAFO, but who erroneously claimed the 25-year, 24-hour storm exemption and avoided applying for an NPDES permit on that basis, continue to be in violation of the regulations and need to immediately apply for NPDES permit coverage. Today's rule also does not extend the date by which operations that have previously been designated as a CAFO should have applied for an NPDES permit.

The third category described in Table 4.2 pertains to a category of permittees who become CAFOs subsequent to the effective date of today's rule, but who are not defined as "new sources" in accordance with the new source criteria. For example, a newly constructed Medium CAFO falls in this category, since it is not subject to the new source performance standards in Part 412. Newly constructed CAFOs in this category must seek coverage under an NPDES permit 180 days prior to the time the CAFO commences operation. This requirement is designed to parallel the time for permit application for new sources. Other operations that become CAFOs after the effective date of today's rule, including, for example, operations that increase the number of animals in confinement to a level that would result in the operation being defined as a CAFO, but that are not new sources, are required to seek permit coverage as soon as possible but no later than 90 days after being defined as a CAFO. EPA is establishing this date by which such new dischargers must seek coverage under an NPDES permit in consideration of the unique nature of AFO operations. In other industries, a facility would typically require significant capital improvements to become a newly discharging point source. AFOs, on the other hand, may become a new discharger merely by increasing the number of animals housed in confinement at the facility. Moreover, the increase necessary to meet the threshold numbers necessary to be defined as a CAFO could be relatively small. Such an increase could be necessary in response to fast-changing market conditions, in which case it would be an undue burden on the AFO to encounter a delay of 180 days before being able to operate as a CAFO. Inasmuch as CAFOs are not continuous dischargers, the Agency

believes that it is reasonable and sufficient for a CAFO that is a new discharger (other than those that are newly constructed operations) to seek coverage within 90 days after becoming defined as a CAFO.

EPA is establishing an additional permit application deadline in this category of three years where the change that causes the operation to be defined as a CAFO would not have caused it to be defined as a CAFO if the change had occurred prior to the effective date of today's rule. This would include, for example, a dry poultry operation that, sometime after the effective date of today's rule, adds animals and exceeds the threshold for becoming defined as a CAFO. The Agency is establishing this permit application deadline since it is appropriate to treat such facilities on an equal footing to dry poultry operations that become defined as CAFOs as of the effective date of today's rule and who therefore have three years to apply for a permit. It would have been inequitable to have allowed a dry poultry operation that exists at the time this rule becomes effective to have three years to apply but to require a dry poultry operation that becomes a CAFO because it adds a small number of animals shortly after this rule becomes effective to apply within 90 days.

4. What Are the Different Types of Permits?

Today's final rule allows the permitting authority to determine the most appropriate type of permit coverage for a CAFO. Under the NPDES regulations, the two basic types of NPDES permits that can be used are individual permits and general permits. Refer to section V.E. of this preamble for further discussion about the different types of permits.

What did EPA propose? The proposed rule would have required States to conduct a public process for determining which criteria, if any, would require a CAFO owner or operator to apply for an individual rather than a general permit. The proposed rule also would have added a set of CAFO-specific criteria for when the Director may require an individual permit: (1) CAFOs located in an environmentally or ecologically sensitive area; (2) CAFOs with a history of operational or compliance problems; (3) CAFOs that are exceptionally large operations as determined by the permitting authority; and (4) significantly expanding CAFOs. EPA noted in the preamble to the rule as well that it had considered identifying a specific size threshold for individual permits, such as 5,000AU or 10,000AU,

and solicited comment and information relating to such a threshold.

What were the key comments?

Comments from industry and State agencies by and large were both against setting criteria for individual permits and against establishing a public process for developing such criteria. States in particular felt that existing NPDES regulations already adequately defined the process for developing individual and general permits, and strongly advocated against being told at the federal level what criteria to use in issuing permits. Environmental groups commented that they wanted strict federal criteria for individual permits out of concerns regarding the need for federal oversight over large operations and because of their keen interest in the public involvement afforded by individual permits. Many of these commenters stated that all Large CAFOs (*i.e.*, all with what was formerly termed 1,000 AU) should be required to have an individual permit.

Rationale. EPA elected not to set conditions for determining which CAFOs must have individual rather than general permits or to require the States to establish such conditions. The Agency determined that selecting a set of specific thresholds fundamentally fails to recognize the diversity of feeding operations in States across the nation. What may be a "large" facility in one State is often not viewed as such in another. This view was confirmed by the Agency's findings on this issue that although many States set criteria for who must have individual rather than general permits, these conditions vary greatly from State to State and are generally dominated by regional environmental concerns.

5. How Does a CAFO Apply for a Permit?

CAFO owners or operators must submit an application for an individual permit or submit a NOI (or the State's comparable form) for coverage under an applicable general permit. If a general permit is not available, the CAFO does not meet the eligibility requirements for coverage under the general permit, or the CAFO would otherwise prefer to be covered by an individual permit, the CAFO owner or operator must submit to the permitting authority an application (EPA's Form 2B for CAFOs and Aquatic Animal Production Facilities or the State's comparable form) for an individual permit. Today's final rule does not make any changes in how a CAFO applies for a permit.

6. What Are the Minimum Required Elements of an NOI or Application for an Individual Permit?

Today's final rule revises the information requirements for seeking coverage under an NPDES permit for CAFOs. Today's rule revises the NPDES individual permit application for CAFOs (Form 2B for CAFOs and Aquatic Animal Production Facilities), and specifies the information required in an NOI form for coverage under a CAFO general. EPA is requiring applicants for coverage under either individual or general CAFO permits to provide the same information:

(i) The name of the owner or operator;

(ii) The facility location and mailing addresses;

(iii) Latitude and longitude of the production area (entrance to production area);

(iv) A topographic map of the geographic area in which the CAFO is located showing the specific location of the production area, in lieu of the requirements of paragraph (f)(7) of § 122.21;

(v) Specific information about the number and type of animals, whether in open confinement and housed under roof (beef cattle, broilers, layers, swine weighing 55 pounds or more, swine weighing less than 55 pounds, mature dairy cows, dairy heifers, veal calves, sheep and lambs, horses, ducks, turkeys, other);

(vi) The type of containment and storage (anaerobic lagoon, roofed storage shed, storage ponds, underfloor pits, above ground storage tanks, below ground storage tanks, concrete pad, impervious soil pad, other) and total capacity for manure, litter, and process wastewater storage (tons/gallons);

(vii) The total number of acres under control of the applicant available for land application of manure, litter, or process wastewater;

(viii) Estimated amount of manure, litter, and process wastewater generated per year (tons/gallons);

(ix) Estimated amount of manure, litter, and of process wastewater transferred to other persons per year (tons/gallons); and

(x) For CAFOs that must seek coverage under a permit after December 31, 2006, certification that a nutrient management plan has been completed and will be implemented upon the date of permit coverage.

The complete Form 2B application containing all of the amendments to the application is included as an appendix to this preamble. The required data elements of the NOI are the same as the minimum data elements in the revised

Form 2B. Where EPA is the permitting authority, it is EPA's intent to use the National NOI Processing Center to process NOIs.

What did EPA propose? EPA proposed to require applicants for individual permits to submit the following information in addition to the information required at 40 CFR 122.21(f) and 122.21(i):

- Acreage available for agricultural use of manure and wastewater;
- Estimated amount of manure and wastewater to be transferred off-site;
- Name and address of any person or entity that owns animals to be raised at the facility; directs the activity of persons working at the CAFO; specifies how the animals are grown, fed, or medicated, or otherwise exercises control over the operations of the facility; (in other words, that may exercise substantial operational control);
- If a new source, a copy of the draft Permit Nutrient Plan (PNP);
- Information about whether buffers, setbacks, or conservation tillage is being used to protect water quality; and
- A topographic map (required by Form 1) that identifies the latitude and longitude of the production area and the depth to ground water that may be hydrologically connected to surface water, if any.

EPA proposed that similar information be provided in a revised NOI for coverage under an NPDES CAFO general permit.

What were the key comments? Most of the comments received on this issue were from the States. Several citizens and associations also submitted comments. Several commenters wanted EPA to delete the requirement that the permittee submit the Permit Nutrient Plan with the permit application. Some States would also like to continue to use their forms and not the revised Form 2B. Some commenters argued that the proposed requirements set an undesirable precedent that is both unnecessary, (because NOI requirements are normally specified in the relevant general permit) and that could negatively affect other industries and reduce the flexibility of State permitting authorities.

The SBAR Panel did not specifically comment on the content of the changes to Form 2B and the NOI, but the Panel noted the substantial number of small entities in the medium range and recommended that EPA carefully consider the burden of any additional certification or application requirements. The Panel further noted that EPA had not ruled out the option of requiring a full permit application from all operations in the medium

range. The Panel was concerned that such an approach may impose a significant burden with limited environmental benefits and therefore recommended that EPA carefully consider appropriate streamlining options before considering a more burdensome approach. Finally, the Panel recommended that before adding any new application or certification requirements for operators in the medium range, EPA should carefully weigh the burden and environmental benefits of expanding the scope of the regulations in this way.

Rationale. To clarify the subsequent discussion, it is important to point out that EPA is not adopting the term "Permit Nutrient Plan" in this final rule. The Agency is referring to the nutrient management planning requirements of today's rule simply as the nutrient management plan. EPA is not requiring the nutrient management plan to be submitted as part of the permit application for existing sources or new dischargers. Instead, the permitting authority may establish within the permit what information relative to the nutrient management plan must be submitted. At a minimum, nutrient management plans must be maintained on-site and be available upon request by EPA or the State permitting authority. Regarding the changes to the individual permit application form and the NOI for coverage under a general permit, EPA believes that the minimum data elements adopted in today's rule will provide permitting authorities with the essential information needed to evaluate permit applications properly and will ensure national consistency of information received by permit authorities. To the extent that a permitting authority needs additional information to support a permit application, it can use other Clean Water Act information gathering authorities (e.g., section 308 of the Clean Water Act) to obtain such information. The new data elements correspond with the new rule requirements, including land application information.

In today's final rule, the Agency has revised the topographic map requirements for a permit application for CAFOs, by specifying that the CAFO must provide a topographic map of the geographic area in which the CAFO is located showing the specific location of the production area. In today's final rule, the Agency is consolidating all of the information to be submitted as part of a CAFO's request to seek coverage under an NPDES permit in 40 CFR 122.21(i). This information must be submitted by a CAFO, whether the CAFO is seeking coverage under an

individual permit or a general permit. In establishing the topographic map requirement of § 122.21(i)(iv), the Agency is requiring the descriptive information necessary for permitting a CAFO, and not including all of the elements specified in 40 CFR 122.21(f)(7), which generally do not apply to a CAFO's operations.

In the future, EPA plans to allow the electronic submission of all NPDES permit applications such as Forms 1, 2B, and Notices of Intent for general permits (including attachments such as maps and diagrams). EPA has proposed a separate rule dealing with electronic reporting and recordkeeping (66 FR 46161; August 31, 2001) and is currently working to address comments and resolve technical and legal issues. None of the information collection requirements being promulgated in today's rulemaking are intended to limit or conflict with the future use of electronic reporting or recordkeeping.

C. What Are the Requirements and Conditions in an NPDES Permit?

All CAFO NPDES permits must contain a number of requirements and conditions, including effluent limitations, special conditions, standard conditions, and monitoring and reporting requirements. The December 1996 *U.S. EPA NPDES Permit Writers Manual*, 40 CFR 122.41, and 40 CFR 122.42 provide a detailed discussion of all aspects of an NPDES permit. This section focuses primarily on the major elements of a CAFO NPDES permit that are affected by today's rule. Specifically, this section describes the effluent limitations, special conditions applicable to CAFOs, standard conditions included in all NPDES permits, and monitoring and reporting requirements.

1. What Are the Different Types of Effluent Limitations That May Be in a CAFO Permit?

When developing effluent limitations for a CAFO NPDES permit, the permitting authority must consider limits based on applicable technology-based requirements or any more stringent requirements necessary to protect water quality. A water quality-based effluent limitation is designed to protect the quality of the receiving water by ensuring State or Tribal water quality standards are met. In cases where a technology-based permit limit is not sufficiently stringent to meet water quality standards, the permit must include appropriate water quality-based standards. For example, a technology-based standard for a CAFO might allow overflows from storage lagoons under

certain circumstances. In some cases, the overflows might have to be restricted or further controlled to ensure that water quality standards are met. EPA does not expect that water quality-based effluent limitations will be established for CAFO discharges resulting from the land application of manure, litter, or process wastewater. As explained in Section IV.A.6 above, if a CAFO complies with the technical standards for nutrient management established by the Director, any remaining discharges of manure or process wastewater from the land application area are considered agricultural storm water. However, EPA encourages States to address water quality protection issues in their technical standards for determining appropriate land application practices. Today's rule does not change any aspects of water quality-based effluent limitations in the NPDES regulations.

There are two general approaches to developing technology-based limitations: (1) Using national effluent limitations guidelines (ELGs) and (2) using BPJ on a case-by-case basis (in the absence of ELGs). Today's rule revises the ELGs for Large CAFOs. Small and Medium CAFOs are not subject to the ELGs; therefore, the permitting authority will rely on BPJ to establish technology requirements for Small and Medium CAFOs. Revisions to the ELGs are discussed in detail below.

2. Effluent Limitations Guidelines for Large CAFOs

The effluent limitations section in NPDES permits is the primary mechanism for controlling discharges of pollutants to waters of the U.S. This section of the permit describes the specific limitations, in either a narrative or numeric form, that apply to the permittee. The permit contains either technology-based effluent limits (those based on a determination of the degree of pollutant reduction that can be achieved by applying pollution control technologies or practices) or water quality-based effluent limits (those based on the condition of the receiving water body) or both, and it may contain additional BMPs, as needed. This section discusses the ELGs established for Large CAFOs.

Today's final rule establishes new ELGs for Part 412, Subpart C, which applies to beef cattle, dairy cattle, and heifers; and Part 412, Subpart D, which applies to veal calves, swine, and poultry (chickens and turkeys). Today's rule also revises the applicability of Part 412, Subpart A to cover only horses and sheep.

Requirements for Large CAFOs are being established under the authority of Best Practicable Control Technology Currently Available (BPT), Best Available Technology Economically Achievable (BAT), Best Conventional Pollutant Control Technology (BCT), and NSPS, consistent with the factors for consideration under the Clean Water Act, as discussed in Sections II.A.2 and IV.C.2.f of this preamble.

a. To which CAFOs do the effluent guidelines apply? In today's final rule, EPA is revising the 1974 ELGs for beef cattle, dairy cattle, veal calves, swine, and poultry. Consistent with the 1974 ELG regulation, EPA is continuing to apply technology-based ELGs only to those operations which are defined as Large CAFOs at 40 CFR 122.23. In the case of Medium or Small CAFOs, or CAFOs not otherwise subject to Part 412, effluent limitations will be established on a case-by-case basis by the permitting authority using BPJ.

This final rule removes language referring to the type of manure handling or watering system employed at laying hen and broiler operations; as a result, it expands the scope of the rule to also address chicken operations with dry litter management systems. The term "dry" does not mean that no wastewaters are associated with these types of operations. For example, poultry waste includes manure, poultry mortalities, litter, spilled water, waste feed, water associated with cleaning houses, runoff from litter stockpiles, and runoff from land where manure has been applied. Today's rule adds explicit references to veal operations and includes requirements for Large veal CAFOs under Part 412, Subpart D. (Veal calves were included in the 1974 ELGs as part of "slaughters steers and heifers.") Today's rule further expands the applicability of the effluent guidelines to cover Large heifer CAFOs and operations that confine immature swine (*i.e.*, swine weighing less than 55 pounds).

What did EPA propose? In the proposed rule, EPA applied the technology-based ELGs to all Large CAFOs (the 1974 ELGs apply to only Large CAFOs) and proposed to expand the scope of the rule to apply to Medium CAFOs as well. Small CAFOs were excluded from the applicability of the ELGs in the proposed rule, and the limits included in their permits were to be based on BPJ. EPA also proposed to expand the scope of the rule to include heifer operations, immature swine operations (*e.g.*, swine nurseries), and chicken operations with dry litter management systems.

What were the key comments? EPA received a variety of comments regarding the size of operation to which the ELGs should apply. A number of comments favored retaining the framework of the 1974 ELGs, limiting the applicability of the ELGs to Large CAFOs and relying on the use of BPJ for Small and Medium CAFOs. Some commenters favored allowing even broader use of BPJ, with the permitting authority establishing BPJ-based permit limits for all CAFOs, regardless of size. Conversely, other commenters suggested applying the ELG requirements to all CAFOs, including Small and Medium CAFOs. In general, commenters expressing support for applying ELG requirements to Small and Medium CAFOs believe that basing permit requirements on BPJ will lead to a lack of uniformity in permit development. They believe the permit writers should not have an inappropriate amount of flexibility and there should be consistent effluent limitations for all CAFOs.

The SBAR Panel provided comments to EPA on this topic during the development of the proposed rule, suggesting that EPA consider less stringent ELGs for Medium CAFOs or allow permits for Medium CAFOs to be developed based on BPJ. The SBAR Panel stated that providing a mechanism for permitting authorities to establish less stringent guidelines for smaller facilities, based on consideration of economic achievability, could result in permit conditions that are more appropriately tailored to smaller operations and reduce the overall financial burden on the industry.

Rationale. The ELGs being promulgated in today's rule apply only to Large CAFOs, which is consistent with the approach used for the 1974 ELG regulation. EPA is not extending the ELG requirements being codified at 40 CFR Part 412 to Small or Medium CAFOs because setting the permit limitations for these facilities using BPJ allows for the establishment of permit conditions that are more appropriately tailored to and more directly address the site-specific conditions that led to the facility being defined or designated as a CAFO. This approach is consistent with the manner in which permit requirements for Small and Medium CAFOs have been established prior to today's rule.

The ELGs promulgated in today's rule mimic the fundamental structure embodied in the NPDES provisions. The NPDES provisions at Part 122 establish a threshold (in terms of numbers of animals) above which every AFO is defined as a CAFO (specifically, these

are defined as Large CAFOs). Similarly, EPA has determined that, because of the nature of these Large CAFOs and the potential risk discharges from these operations pose to the environment, the ELGs promulgated today should apply to Large CAFOs. However, for the reasons discussed below and consistent with the approach used in establishing the 1974 ELGs, EPA is not establishing ELGs for Small or Medium CAFOs. EPA's analyses, based on USDA data, show that small and medium AFOs are more likely than Large CAFOs to have a sufficient land base for utilizing manure nutrients at rates consistent with appropriate agricultural utilization of nutrients. Small and medium AFOs are defined or designated as CAFOs only when certain conditions that pose an environmental risk are present at the operation. Since these smaller operations become CAFOs only if certain conditions are present, and the highly site-specific conditions that trigger any particular operation being defined or designated as a Small or Medium CAFO will vary from facility to facility, discharges from Small and Medium CAFOs are more appropriately controlled through NPDES permit limitations on a BPJ basis. EPA expects that, by tailoring the permit requirements for Small and Medium CAFOs on a BPJ basis, these smaller facilities will be able to better and more efficiently target their more limited resources to reducing their environmental impacts. This increased flexibility for setting the permit requirements for Small and Medium CAFOs will reduce the overall financial burden on the industry. Consistent with the Unified National AFO Strategy, EPA is focusing today's ELGs on those larger operations that present the greatest potential risk to water quality.

EPA is extending the applicability of the ELGs to heifer operations and operations that confine immature swine (*i.e.*, swine weighing less than 55 pounds). Increasingly, swine operations may specialize in a production phase, such as a nursery that confines swine under 55 pounds. In the dairy sector, some operators prefer to obtain their dairy cattle from heifer-raising operations. These heifer operations specialize in raising immature dairy cattle until the cattle are ready for their first calving. These operations for immature animals are increasing in both size and number, and they operate similarly to other CAFOs. Therefore, EPA is today including immature swine under Subpart D (swine/poultry/veal) and heifer operations under Subpart C (beef/dairy/heifer) of the ELGs.

In addition, EPA is expanding the scope of the ELGs to address chicken operations with dry litter management systems to better address water quality impacts associated with both storage and land application of manure, litter, and process wastewaters. EPA believes that improper storage, as well as improper land application rates that exceed the appropriate agricultural utilization of nutrients, has contributed to water quality problems, especially in areas with large concentrations of poultry production. Nutrients from large poultry operations continue to contaminate surface waters because of rainfall coming in contact with dry manure that is stacked in exposed areas, accidental spills, etc. In addition, land application remains the primary management method for significant quantities of poultry litter (including manure generated from facilities using dry systems). Most poultry operations are located on smaller parcels of land in comparison to other livestock sectors, placing increased importance on the proper management of the potentially large amounts of manure, litter, and process wastewaters that they generate.

In the 1974 ELG regulations, EPA established requirements in a manner that placed CAFOs into one of two groups, or subcategories, based on the type of animals at the operation: One subcategory established requirements for ducks only; the second subcategory established identical ELG requirements for CAFOs with horses, sheep, slaughter steers and heifers (including veal calves), dairy cattle, chickens, turkeys, and swine.

Today's rule establishes ELGs based on segregating the animal sectors into four different subcategories. The ELG regulations at Part 412, Subpart A now apply only to Large CAFOs with horses and sheep, but the ELG requirements for these operations remain unchanged by today's rule. Part 412, Subpart B continues to apply only to CAFOs with at least 5,000 ducks and these requirements also remain unchanged by today's rule. Today's rule segregates the remaining animal types covered by the ELGs into two additional subcategories. Part 412, Subpart C applies to Large CAFOs with dairy or beef cattle other than veal (heifer operations are covered by this subpart), and Part 412, Subpart D applies to Large CAFOs with swine, veal, or poultry. EPA developed these subcategories to better reflect similarities in production and waste management practices among the operations grouped together.

The operations in Subpart C predominantly use production and waste management practices that differ

substantially from those practices used at operations in Subpart D. Large swine, poultry, and veal calf operations predominantly maintain their animals in confinement housing as opposed to the open outdoor lots used at the vast majority of large beef feedlots, heifer operations, and dairies (while dairy cattle at many dairies spend much of their time indoors either in the milking parlor or in barns, most dairy cattle also have access to outdoor areas similar in many respects to the outdoor areas at beef feedlots). The open outdoor lots present at beef feedlots expose large areas to precipitation, necessitating the ability to collect storm water runoff in retention ponds. Heifer operations (other than those that are pasture-based) are configured and operated in a manner very similar to beef feedlots, and thus have very similar waste management practices. Dairies also frequently keep animals in open areas for some period of time, whether it is simply the pathway from the barn to the milk house or an open exercise lot. Storm water runoff from these open areas must be collected in addition to any storm water that contacts food or silage. As is the case for beef feedlots and heifer operations, the runoff volume from the exposed areas is a function of the size of the area where the cattle are maintained, and the amount of precipitation.

Because swine, poultry, and veal calves are predominantly maintained in confinement housing, the waste management practices at Large CAFOs covered by Subpart D differ substantially from the practices at Subpart C operations. These confinement operations are able to manage manure largely in a relatively dry form, or contain liquid wastes in storage structures such as lagoons, tanks, or underhouse pits. Broiler and turkey operations generate a dry manure which can be kept covered either under a shed or with tarps. Laying hen operations with dry manure handling practices usually store manure below the birds' cages and inside the confinement building. Nearly all swine, veal, and poultry operations confine their animals under roof, avoiding the use of open animal confinement areas that generate large volumes of contaminated storm water runoff. These Subpart D operations differ most notably from Subpart C operations in that they, in most cases, do not have to manage the large volumes of storm water runoff that must be collected at Subpart C operations. While Subpart D operations that manage wastes in uncovered lagoons must be able to

accommodate precipitation, they are largely able to divert uncontaminated storm water away from the lagoons and minimize the volume of wastes they must manage.

The statutory factors considered as a basis for subcategorization are discussed in Section IV.C.2.f of the preamble and in the *Technical Development Document*.

b. What are the land application effluent guidelines for all Large CAFOs covered by Subparts C and D (beef, dairy, heifer, swine, poultry, and veal)?

The ELGs described in this section apply to all Large CAFOs covered by Part 412, Subpart C (beef, dairy, and heifer) and Subpart D (swine, poultry, and veal). These BPT, BCT, BAT, and NSPS requirements are being established for the reasons discussed below in this section, and consistent with the factors for consideration under the Clean Water Act, as discussed in Sections II.A.2 and IV.C.2.f of this preamble.

Today's final rule establishes requirements to ensure the proper application of manure, litter, and other process wastes and wastewaters to land under the control of Large CAFOs. The ELGs established by this rule require Large CAFOs to prepare and implement a site-specific nutrient management plan (described in detail in Section IV.C.3), for manure, litter, and other process wastewater applied to land under their ownership or operational control. In addition to preparing the site-specific nutrient management plan, and the recordkeeping and reporting requirements described in Section IV.D, Large CAFOs need to conduct the following land application BMPs and can use other BMPs that assist in complying with the ELGs:

- Land-apply manure, litter, and other process wastewaters in accordance with a nutrient management plan that establishes application rates for each field based on the technical standards for nutrient management established by the Director.
- Collect and analyze manure, litter, and other process wastewaters annually for nutrient content, including nitrogen and phosphorus.
- At least once every five years, collect and analyze representative soil samples for phosphorus content from all fields where manure, litter, and other process wastewaters are applied.
- Maintain a setback area within 100 feet of any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters where manure, litter, and other process wastewaters are not applied. As a

compliance alternative, the CAFO may elect to establish a 35-foot vegetated buffer where manure, litter, or other process wastewaters are not applied. For further flexibility the CAFO may demonstrate to the permitting authority that a setback or vegetated buffer is unnecessary or may be reduced.

- Periodically conduct leak inspections of equipment used for land application of manure, litter, or process wastewater.

- Maintain on-site the records specified in 40 CFR 412.37(c). These records must be made available to the permitting authority and the Regional Administrator, or his or her designee, for review upon request. Records must be maintained for 5 years from the date they are created.

Today's rule requires Large CAFOs to determine and implement site-specific nutrient application rates that are consistent with the technical standards for nutrient management established by the permitting authority. Permitting authorities have discretion in setting technical standards that minimize phosphorus and nitrogen transport to surface water. Technical standards for nutrient management should appropriately balance the nutrient needs of crops and potential adverse water quality impacts in establishing methods and criteria for determining appropriate application rates. The permitting authority may use the USDA Natural Resource Conservation Service (NRCS) Nutrient Management Conservation Practice Standard, Code 590, or other appropriate technical standards, as guidance for development of the applicable technical standard. The current NRCS Nutrient Management technical standard describes three field-specific risk assessment methods to determine whether the land application rate is to be based on nitrogen or phosphorus, or whether land application is to be avoided. These three methods are: (1) Phosphorus Index; (2) Soil Phosphorus Threshold Level; and (3) Soil Test Phosphorus Level. The permitting authority has the discretion to determine which of these three methods, or other State-approved alternative method, is to be used.

The field-specific risk assessment provides CAFOs with the information needed to determine if manure nutrients should be applied at a nitrogen or phosphorus application rate, or if no manure application is appropriate. In today's rule, EPA clarifies that CAFOs may apply conservation practices, best management practices, or management activities to their land application areas, which in aggregate may reduce field vulnerability to off-site phosphorus

transport to surface waters. This may reduce the field-specific risk rating to a level consistent with manure application at a nitrogen rate in accordance with the technical standard established by the Director.

When establishing technical standards for nutrient management, the permitting authority also shall include appropriate flexibilities for any CAFO to implement nutrient management practices to comply with the standards. Flexibilities should include consideration of multi-year phosphorus application (also called phosphorus banking) on fields that do not have a high potential for phosphorus runoff to surface water, implementation of phosphorus-based nutrient management phased-in over time, and other components as determined appropriate by the Director.

EPA recognizes that, under some conditions, CAFOs may experience practical difficulties in applying manure nutrients to fields at a low phosphorus rate. Application equipment at some CAFOs may be unable to deliver the small phosphorus amount needed by crops in a single year. Thus, EPA is clarifying in this rule that CAFOs may elect to use a multi-year phosphorus application rate in accordance with the technical standards established by the Director. A multi-year approach allows a single application of phosphorus applied as manure at a rate equal to the recommended phosphorus application rate or estimated phosphorus removal in harvested plant biomass for the crop rotation or multiple years in the crop sequence. Crop rotations may vary in length depending on the crops produced, geographic area, and other site-specific conditions. For example, a two-year rotation may be common in some areas, while a three-year rotation may be more common in others. Rotations involving grains or hays, such as alfalfa, may run for five or more years. In other instances, crops are produced in a continuous cycle. Many wastewater spray fields are permanently in hay and grasses. In practice, multi-year phosphorus applications typically would be based on applying manure nutrients at a rate achievable with a CAFOs application equipment, and determining the removal rate in order to calculate the length of time until the next manure nutrient application window. Thus, multi-year applications may provide the phosphorus needed for a few to many years. The field would not receive additional phosphorus applications until the amount applied in the single year had been removed through plant uptake and harvest. However, under any multi-year

application, the rate at which manure nutrients are applied would not exceed the annual nitrogen recommendation of the year of application. Nor would application be made on sites determined inappropriate based on a high potential for phosphorus runoff to surface water. The appropriateness of multi-year phosphorus application would be based on a field-specific risk assessment in accordance with the technical standard established by the Director.

What did EPA propose? The proposed rule included ELGs that would have required CAFOs to develop and submit a certified Permit Nutrient Plan, which would be reviewed annually and recertified every five years, and would have limited manure spreading on all land owned or under the operational control of the CAFO to the nitrogen-based rate, unless soil or other field conditions at the CAFO warranted limiting the application rate to the more stringent phosphorus-based rate. EPA also proposed to require a series of land application BMPs, including those listed above in this section of the preamble.

What were the key comments? EPA received a number of comments supporting the type and frequency of manure, litter, process wastewater, and soil sampling. Some commenters were opposed to establishing the proposed phosphorus-based standard in nutrient management plans, while other commenters stated that EPA should establish phosphorus-based standards for all CAFOs. In addition, some commenters were opposed to the inclusion of specific manure, litter, or wastewater application rates in NPDES permits, but supported the development of site-specific rates in a nutrient management plan.

EPA received many comments on the requirement to prohibit land application of manure, litter, and other process wastewaters within a 100-foot setback. Some commenters supported the 100-foot setback; however, the majority of commenters expressed opposition to establishment of a setback, in many cases stating that the setback restriction will unnecessarily reduce the available acreage for manure application and will be costly to implement because of its inflexibility. The commenters also stated that it should be left to States or a nutrient management planner to determine whether a setback or vegetated buffer is warranted, and to determine the size of such areas. The proposed rule considered allowing CAFOs to establish a 35-foot vegetated buffer strip as an alternative to the 100-foot setback. Many commenters were in favor of an approach that offers

flexibility to the CAFO and to the nutrient management planner to incorporate site-specific considerations while utilizing the maximum amount of manure nutrients on site. They suggested that in cases where the operation can demonstrate that manure application will not affect surface water, such as when application occurs down-gradient of the surface water, no setback or buffer should be required.

The SBAR Panel noted the high cost of phosphorus-based application relative to nitrogen-based application and supported EPA's intent to require the use of a phosphorus-based application rates only where determined necessary based on field-specific conditions. According to the SBAR Panel, if the soil is not phosphorus-limited, then nitrogen-based application should be allowed. The SBAR Panel recommended that EPA consider leaving the determination of whether to require the use of phosphorus-based rates to BPJ and that EPA work with USDA in exploring such an approach.

Rationale. The nutrient-based limitations in this rule will reduce the discharge of nitrogen, phosphorus, and other pollutants in field runoff by restricting the amount of manure, litter, and other process wastewaters that may be applied to the amount that is appropriate for agricultural purposes, according to technical standards established by the permitting authority. Application of manure, litter, and other process wastewaters in excess of the crop's nutrient requirements increases the pollutant runoff from fields because the crop does not need these nutrients, increasing the likelihood of their being released to the environment. In many cases, the application of manure at a nitrogen-based rate is consistent with appropriate agricultural utilization of nutrients. Soils are able to retain the amounts of phosphorus that would be applied, or other site-specific conditions (e.g., the types of conditions assessed through the phosphorus index approach) are such that the runoff of phosphorus and other pollutants or the likelihood of the pollutants reaching surface waters are adequately controlled.

However, allowing all manure to be spread at the nitrogen-based application rate may not always ensure appropriate agricultural utilization of nutrients. In areas that have high to very high phosphorus buildup in the soils, allowing continued application at a nitrogen-based rate could allow for continued discharge of phosphorus from the CAFO's cropland and consequently may not adequately control phosphorus discharges from these areas. In addition,

EPA believes that in some instances phosphorus levels in soils are so high, or site-specific conditions (e.g., highly erodible soils) are such that any application of manure, litter, or other process wastewaters would be inconsistent with appropriate agricultural utilization of nutrients and would lead to excessive levels of nutrients and other pollutants in runoff. EPA expects that these factors will be taken into account as State permitting authorities develop appropriate technical standards for the land application of manure by CAFOs.

The trace metals present in animal wastes, when applied to fields at either nitrogen- or phosphorus-based rates, are made available to plants in sufficient quantities that they provide many of the micronutrients necessary for proper plant growth. Excessively high levels of these trace metals, however, can inhibit plant growth. By limiting manure applications to the nitrogen- or phosphorus-based rate, CAFOs will also be limiting the rate at which metals are applied to fields and thus reduce the potential for applying excessive amounts of the trace metals.

Nitrogen-based application rates are generally based on the following factors: (1) The nitrogen requirement of the crop to be grown based on the operation's soil type and crop; and (2) realistic crop yields that reflect the yields obtained for the given field in prior years or, if not available, from yields obtained for the same crop at nearby farms or county records. Once the nitrogen requirement for the crop is established, the manure application rate is generally determined by subtracting any other sources of nitrogen available to the crop from the crop's nitrogen requirement. These other sources of nitrogen can include residual nitrogen in the soil from previous applications of organic nitrogen, nitrogen credits from previous crops of legumes and crop residues, or applications of commercial fertilizer, irrigation water, and biosolids. Application rates are based on the nitrogen content in the manure and should also account for application methods, such as incorporation, and other site-specific practices. Phosphorus-based application rates generally take into account the phosphorus requirements of the crop, as well as the amount of phosphorus that will be removed from the field when the crop is harvested. EPA expects that State standards will generally provide CAFOs the flexibility to determine, separately for each field, whether manure is to be applied at the nitrogen- or the phosphorus-based application rate. Thus, EPA expects that as the ELG

requirements are implemented, some CAFOs will be able to apply manure at the nitrogen-based rate for all of their fields; some CAFOs will be limited to the phosphorus-based rate on all of their fields; and the remaining CAFOs will have some fields that are limited to the phosphorus-based rate and some fields where manure can be applied at the nitrogen-based rate. In making these field-specific determinations, CAFOs must use the method authorized by the permitting authority.

Today's rule specifies that manure, litter, or other process wastewaters are not to be applied within 100 feet of any down-gradient surface waters, open tile line intake structures, sinkholes, agricultural well heads, or other conduits to surface waters. As a compliance alternative to the 100-foot setback, the CAFO may elect to establish a 35-foot vegetated buffer where application of manure, litter, and other process wastewaters are not applied; or may demonstrate to the permitting authority that a setback or vegetated buffer is unnecessary or may be reduced because implementation of alternative conservation practices or site-specific conditions will provide pollutant reductions equivalent to or better than the reductions that would be achieved by the 100-foot setback.

A setback is an area where manure, litter, or other process wastewaters are not applied, but crops may continue to be grown. The transport of nutrients and other pollutants in manure to surface waters and the rate at which transport occurs is dependent on the land use, geography, topography, climate, amount and method of manure application, and the nature and density of vegetation in the area. The setback achieves pollutant reductions by increasing the distance pollutants from the land application of manure, litter, or other process wastewaters have to travel to reach surface waters. The setback requirements established by this rule will minimize the potential runoff of pathogens, hormones such as estrogen, and metals and reduce the nutrient and sediment runoff.

Because a setback may not be the most cost-effective practice to control runoff in all cases, this rule includes a compliance alternative that allows the CAFO to establish a 35-foot vegetated buffer in lieu of the 100-foot setback. A vegetated buffer is a permanent strip of dense perennial vegetation, where no crops are grown, that slows runoff, increases water infiltration, absorbs nutrients, and traps pollutants bound to sediment. The vegetated buffer is more effective (on a per-foot of width basis) than the setback at reducing pollutant

runoff, therefore the compliance alternative allows the buffer width to be smaller than the setback. Both approaches are expected to achieve comparable pollutant reductions. (EPA decided not to require all fields receiving manure, litter, or other process wastewaters to have a vegetated buffer because that would unnecessarily require CAFOs to take that portion of the cropland out of production.)

The setback requirements included in today's rule contain an additional compliance alternative that allows the CAFO to implement alternative conservation practices that will provide pollutant reductions equivalent to or better than the 100-foot setback. In some cases, the CAFO may be able to demonstrate to the permitting authority that no setback is necessary based on site-specific conditions, such as when the surface water is located up-gradient from the area of manure application.

Manure must be sampled at least once per year and analyzed for its nutrient content, including nitrogen and phosphorus. EPA believes that annual sampling of manure is the minimum frequency to provide the necessary nutrient content on which to establish the appropriate application rate. The nutrient composition of manure varies widely among farms because of differences in animal species and management, and manure storage and handling practices. The only method available for determining the actual nutrient content of manure for a particular operation is laboratory analysis. If the CAFO applies its manure more frequently than once per year, it may choose to sample the manure more frequently. Sampling the manure as close to the time of application as practical provides the CAFO with a better measure of the nitrogen content of the manure. Generally, nitrogen content decreases through volatilization during manure storage when the manure is exposed to air. All CAFOs must collect and analyze soil samples for phosphorus at least once every 5 years from all fields under their control that receive manure. Soil tests are an important tool to determine the crop phosphorus needs and to determine the optimum application rate. Crop rotation cycles vary, and State programs require soil sampling at varying frequencies that in many cases are tied to the soil type. EPA requires soil sampling at least once every 5 years to correspond with the permit cycle for CAFOs, although States may require more frequent sampling. Without manure and soil analyses, CAFOs might apply more commercial fertilizer than is needed or spread too much manure on their fields. Either

practice can result in overfertilization, affecting crop yields and increasing the pollutant runoff from fields.

Records of the application of manure and wastewater must be maintained on site. These records are: (1) The expected crop yields; (2) the date manure, litter, or process wastewater is applied to each field; (3) the weather conditions at the time of application and 24 hours before and after application; (4) test methods used to sample and analyze manure, litter, process wastewater, and soil; (5) results from manure and soil sampling; (6) explanation of the basis for determining manure application rates, as provided in the technical standards established by the Director; (7) the calculations showing the total nitrogen and phosphorus to be applied to each field, including sources other than manure, litter, or process wastewater; (8) total amount of nitrogen and phosphorus actually applied to each field, including documentation of calculations of the total amount applied; (9) the method used to apply the manure, litter, or process wastewater; and (10) dates of manure application equipment inspection. Crop yields and the manure and soil testing data, as well as records on applications conducted in previous years, are used to determine whether to apply manure on a nitrogen or phosphorus basis and the amount of nutrients to be applied. The CAFO and the permitting authority will use the remaining land application records to track the amount of nutrients applied and to ensure that application occurs consistent with the nutrient management plan.

EPA believes the land application rates, the 100-foot setback (or the use of equivalent practices authorized by the compliance alternative), and the other land application BMPs included in this rule will ensure that manure, litter, and other process wastewaters are applied in a manner consistent with appropriate agricultural utilization of the nutrients in manure, litter, and other process wastewaters. Effluent limitations in the form of BMPs are particularly suited to the regulation of CAFOs. For many CAFOs, controlling discharges to surface waters is largely associated with controlling storm water. Storm water discharges can be highly intermittent, are usually characterized by very high flows occurring over relatively short time intervals, and carry a variety of pollutants whose nature and extent vary according to geography and local land use. Water quality impacts, in turn, also depend on a wide range of factors, including the magnitude and duration of rainfall events, the time period between events, soil conditions, the

fraction of land that is impervious to rainfall, other land use activities, and the ratio of storm water discharge to receiving water flow. CAFOs are required to apply their manure, litter, and other process wastewaters to land in accordance with the site-specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, and other process wastewaters. The manure provides nutrients, organic matter, and micronutrients, which are very beneficial to crop production when applied appropriately. The amount or rate at which manure can be applied that ensures appropriate agricultural utilization of nutrients varies based on site-specific factors at the CAFO. These factors include the crop being grown, the expected crop yield, the soil types and soil concentration of nutrients (nitrogen and phosphorus), and the amount of other nutrient sources to be applied. For these reasons, EPA has determined that relying exclusively on numeric ELGs to control these discharges is infeasible. EPA has determined that the BMPs specified in today's rule represent the minimum elements of an effective BMP program and are necessary to control point source discharges to surface water. In this rule, EPA is promulgating only those BMPs that are appropriate on a nationwide basis, while giving States and permittees the flexibility to determine the appropriate practices at a local level to achieve the effluent limitations. The BMPs included in this rule are necessary to ensure appropriate agricultural utilization of nutrients in manure, litter, and other process wastewater.

EPA rejected establishing national requirements in this rule that would prohibit manure application to frozen, snow-covered, or saturated ground. As envisioned, the prohibition considered (but also rejected) at the time of proposal would have required CAFOs to install sufficient storage capacity to hold manure for the period of time during which the ground is frozen, snow-covered, or saturated. According to EPA's analyses, to meet such a requirement CAFOs in some areas, such as northern States, would need to be able to store manure, litter, and other process wastewaters for up to 270 days, depending on the amount of precipitation and severity of winter. In practice, such a prohibition could result in some facilities needing storage to hold manure and wastes for 12 months to allow for spreading manure at times

that coincide with crop growing periods.

EPA rejected establishing these requirements in the final ELGs because pollutant runoff associated with the application of manure, litter, or other process wastewaters on frozen, snow-covered, or saturated ground is dependent on a number of highly site-specific variables, including climate and topographic variability, distance to surface water, and slope of the land. Such variability makes it difficult to develop a national technology-based standard that is reasonable and does not impose unnecessary cost on CAFO operators. Further, given the site-specific nature of the cropland and runoff characteristics, quantifying the pollutant reduction associated with these requirements is difficult and imposing such requirements through a national regulation could divert resources from other technologies and practices that are more effective. Therefore, EPA believes that requirements limiting the application of manure, litter, or other process wastewaters to frozen, snow-covered, or saturated ground are more appropriately addressed through NPDES permit limits established by the permitting authority. Although EPA has decided not to include requirements limiting the application of manure, litter, or other process wastewaters to frozen, snow-covered, or saturated ground in today's rule, the permitting authority retains the authority and is encouraged to include these types of requirements as technology-based standards using BPJ in NPDES permits as appropriate.

EPA is establishing provisions at 40 CFR 122.42(e) for permitting authorities to include in NPDES permits a requirement for the CAFO to develop and implement a nutrient management plan. Under these provisions, NPDES permits are to include prohibitions, practices, and procedures to achieve compliance with 40 CFR part 412, when applicable, or effluent limitations based on BPJ when 40 CFR part 412 does not apply.

As discussed above in this section and in section IV.C.3, today's rule requires CAFOs to develop and implement a nutrient management plan. For Large CAFOs, this requirement is reflected in the effluent guideline as the BPT/BCT/BAT/NSPS limitations on land application discharges (see 40 CFR 412.4(c)). Other CAFOs are also subject to the requirement to develop and implement a nutrient management plan (see 40 CFR 122.42(e)(1)), although the permitting authority would establish precise elements of the plan, such as manure application rates, on a BPJ basis.

For the reasons detailed below, EPA has concluded that there are certain constraints, including currently insufficient infrastructure capacity, that prevent Large CAFOs (except new sources) from being able to develop and implement the land application BMPs, including the nutrient management plan, by the date they will need to seek permit coverage under the requirements of this rule. Therefore, the ELGs promulgated today require Large CAFOs that are existing sources to implement the land application requirements at 40 CFR 412.3(c) by December 31, 2006 because that is the date when EPA is assured that the required planning is in fact available to the large number of regulated sources and, therefore, becomes BPT/BCT/BAT. (EPA has similarly concluded that Small and Medium CAFOs subject to the NPDES provisions for nutrient management plans also will be unable to develop and implement a nutrient management plan by the date they will need to seek NPDES permit coverage under the requirements of this rule, for reasons of insufficient infrastructure. Therefore, EPA is requiring Small and Medium CAFOs that are existing sources to develop and implement nutrient management plans by December 31, 2006.) For all CAFOs that are new sources (*i.e.*, Large CAFOs constructed after the effective date of this rule), the land application requirements at 40 CFR 412.4(c) apply immediately, as discussed further below.

Nutrient management plans are complex documents and their preparation requires knowledge in a number of areas. To adequately address the requirements established by today's rule, the nutrient management plan should be prepared by individuals (either CAFO owners and operators, or their technical consultants) who are competent in or have an understanding of a number of technical areas, including soil science and soil fertility, nutrient application and management, crop production, soil and manure testing and results interpretation, fertilizer materials and their characteristics, BMPs for the management of nutrients and water, and applicable laws and regulations. Because of this, EPA believes it is reasonable to anticipate that many CAFOs will choose to acquire the services of consultants with the technical expertise to prepare nutrient management plans and make recommendations regarding the implementation of the land application BMPs (*e.g.*, whether to use one of the authorized compliance alternatives in

lieu of the setback requirements; options for reducing the nutrient content of manure, such as treatment or alternative feeding strategies; modifications to cropping strategies and land application practices).

Further, while the provisions of 122.42(e)(1) and 412.4(c)(1) do not specifically require nutrient management plans to be prepared or reviewed by certified experts, EPA recognizes that USDA, and other organizations such as the American Society of Agronomy, Crop Science Society of America, Soil Science Society of America, and a number of land grant universities, recommend that nutrient management plans be prepared by trained and certified specialists. USDA has published technical guidance that calls for the development of CNMPs and details the specific components and considerations that should be addressed during CNMP development. The Unified AFO Strategy, developed jointly by USDA and EPA, defines a national objective for all AFOs to develop CNMPs to ensure appropriate agricultural utilization of nutrients. (The vast majority of these CNMPs will be developed under voluntary programs.) EPA is not requiring CAFOs to use certified experts in preparing the nutrient management plans and is not requiring CAFOs to develop CNMPs, but the regulatory requirements for nutrient management plans are designed to dovetail with USDA standards for CNMPs so that CAFOs can meet EPA's nutrient management plan requirements and USDA's CNMP objectives in a single undertaking. It is therefore reasonable to expect that many CAFOs will opt to have their nutrient management plans prepared by certified specialists, an outcome that EPA encourages.

As discussed in more detail below, EPA interprets Section 301(b)(2) of the CWA to require that, for any effluent guideline promulgated, or any technology-based limitation established on a BPJ basis, after March 31, 1989, a discharger must achieve immediate compliance with the BPT/BCT/BAT effluent limitations upon issuance of the discharger's NPDES permit. With imposition of the nutrient management plan requirement, there may be a large number of CAFOs that are all trying to develop plans at the same time. Yet, there is a limited pool of certified preparers and other technical experts that are available nationwide to develop nutrient management plans and CNMPs. It is reasonable to recognize that Large CAFOs (and Small and Medium CAFOs), along with AFOs, could be competing for the services of the

certified preparers and other technical experts. EPA estimates there are approximately 15,500 CAFOs, including 11,000 Large CAFOs, and 222,000 AFOs. AFOs are not required to prepare CNMPs, but their access to sources of public funds, such as EQIP, may be contingent on their adherence to NRCS technical standards, including preparation of a CNMP. Thus, additional time is needed for development and implementation of the plan.

Another aspect that prevents CAFOs from immediately complying with the land application BMPs is the need for States to ensure that they have established appropriate technical standards that CAFOs will use to determine the appropriate application rates for their fields. These standards must be a part of the State NPDES permitting program revisions discussed in Section V.C of this preamble. In addition, CAFOs will need some time to determine whether they have sufficient cropland for applying all of the nutrients contained in the manure, litter, and other process wastewaters that they generate. If they determine that they have excess nutrients, the CAFOs will need to identify alternatives for reducing the nutrient content, or seek markets for the excess nutrients such as off-site cropland, centralized processing facilities (*e.g.*, pelletizing plants, centralized anaerobic digester-based power generation facilities), or other solutions. These activities cannot logically commence until the CAFO has developed the plan and knows what its allowable manure application rate is.

EPA considered whether CAFOs should be required to implement certain elements of the land application BMPs in advance of preparing a nutrient management plan, but rejected doing so because the elements of the land application BMPs are inseparably linked together. The nutrient management plan is the tool CAFOs must use to assess soil and other field conditions at their operation, in conjunction with manure characterization data and crop rotations and yield projections, to determine the site-specific nitrogen or phosphorus-based rate at which manure, litter, and other process wastewaters are to be applied. The proper application rate can not be reasonably determined without first preparing the nutrient management plan. CAFOs will also use their nutrient management plan to inform their decision making on whether to comply with the provisions at 412.4(c)(5) by establishing the 100-foot setback on their fields or to instead select one of the compliance alternatives authorized by those provisions. EPA has also

determined that requiring manure and soil sampling and the record-keeping requirements included in 412.37(c) in advance of preparing and implementing the nutrient management plan would impose an unnecessary burden on CAFOs because, in the absence of a nutrient management plan that determines the appropriate application rates, these elements will not directly establish that manure will be applied in a manner that ensures appropriate utilization of nutrients. (Some of these actions, such as manure and soil sampling, may well be undertaken by the CAFOs as they develop their nutrient management plans, but EPA determined it was unnecessary for the regulation to impose these requirements in advance of nutrient management plan development and implementation.)

The land application BMPs, including the requirement to develop and implement a nutrient management plan, will immediately apply to all Large CAFOs who commence construction after the effective date of this rule (*i.e.*, new sources). Section 306(b)(1)(B) specifies that new source performance standards shall become effective upon promulgation. New sources engage in extensive site selection, facility design, and construction activities prior to commencing operations. Aspects addressed during this phase include location considerations (*e.g.*, climate and topographical factors), facility design variables to optimize the production process, and waste management considerations including the identification of optimal waste handling practices (*e.g.*, waste collection methods, the use of topographical elevation changes to facilitate waste handling) and disposal options (*e.g.*, on-site application on cropland, shipment to off-site markets). These activities undertaken by new sources prior to commencing construction are highly technical in nature, and CAFOs will typically engage the services of a number of consultants. While CAFOs are expected to engage the services of technical consultants to develop the nutrient management plans required by this rule, the analyses embodied within the nutrient management plan will not significantly add to the scope of analyses new sources will engage in prior to commencing operations.

EPA has considerable discretion under CWA section 304(b)(2) to determine whether and when a particular technology or process is BPT, BCT, or BAT. EPA also has broad authority to interpret CWA section 301. In *E.I. du Pont de Nemours & Co. v. Train*, 430 U.S. 112 (1977), the Supreme Court accorded great deference to EPA

in promulgating effluent limitations guidelines as regulations under section 301, noting that “[CWA Section] 101(d) requires us to resolve any ambiguity on this score in favor of the Administrator.” *Id.* at 128. The Supreme Court also found that section 501(a) supports EPA’s broad use of its regulatory authority to implement section 301. *Id.* at 132. EPA believes that its decision to promulgate the land application BMPs, including the nutrient management plans, with a future date for implementation is authorized by sections 301 and 304. Section 301(b)(2) in particular directs EPA to promulgate ELGs that, within the constraints of economic achievability, “will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants.” Section 301(b)(2)(A).

EPA is aware that CWA sections 301(b)(2)(C) & (D) require ELGs to be achieved “in no case later than three years after the date such limits are promulgated under section 304(b), and in no case later than March 31, 1989.” This language does not speak to the precise question EPA confronts here: whether EPA can promulgate ELGs that are phased in over time. In this case, for the reasons discussed above, while EPA believes that the requirement to develop and implement a nutrient management plan will be an “available” technology in the near future, it is not now available for the large number of CAFOs subject to today’s rule. For this reason, EPA is, in essence, today promulgating what will be the available technology for the future, similar to what the Agency did for the pulp & paper effluent guideline. See 63 FR 18604 (Apr. 15, 1998). EPA is specifying the future date of December 31, 2006 because that is the date by which it predicts that sufficient capacity and capability to develop and implement a nutrient management plan and associated BMPs will be available to the great number of regulated sources. The availability of technical experts, including certified preparers, is a critically important component of the planning requirement, and in a sense is itself the technology basis for that BPT/BCT/BAT limitation. The Clean Water Act requires compliance with a promulgated ELG—*e.g.*, to develop a nutrient management plan—only once the technology ripens as the basis for that ELG, in this case as an available technology. While EPA is promulgating the nutrient management plan requirement as BPT/BCT/BAT in this rulemaking, EPA’s record indicates that it may not truly be available for the

subcategory as a whole until December 31, 2006.

c. What are the production area requirements for all existing and new Large beef, dairy, and heifer CAFOs (Part 412, Subpart C)? In today’s final rule, consistent with the 1974 ELG regulation, EPA is continuing to establish BMPs for the CAFO production area, which includes the animal confinement areas and the manure storage and containment areas. These BPT, BCT, BAT, and NSPS requirements are being established for the reasons discussed in this section, and consistent with the factors for consideration under the Clean Water Act, as discussed in Sections II.A.2 and IV.C.2.f of this preamble.

EPA is largely retaining the current effluent guidelines that apply to beef and dairy operations, and adding language extending these requirements to heifer-raising operations. These regulations, which are codified at 40 CFR Part 412, Subpart C, prohibit the discharge of manure, litter, and other process wastewaters, except for allowing discharge when rainfall causes an overflow from a facility designed, maintained, and operated to contain all manure, litter, and process wastewaters, including storm water, plus runoff from the 25-year, 24-hour rainfall event. In addition, today’s rule requires Large CAFOs to comply with the following BMPs:

- Perform weekly inspections of all storm water diversion devices, runoff diversion structures, animal waste storage structures, and devices channeling contaminated storm water to the wastewater and manure storage and containment structure;
- Perform daily inspections of water lines, including drinking water or cooling water lines;
- Install depth markers in all surface and liquid impoundments (*e.g.*, lagoons, ponds, tanks) to indicate the design volume and to clearly indicate the minimum capacity necessary to contain the 25-year, 24-hour rainfall event, including additional freeboard requirements;
- Correct any deficiencies found as a result of daily and weekly inspections as soon as possible;
- Do not dispose of mortalities in liquid manure or process wastewater treatment systems, and mortalities must be handled in such a way as to prevent discharge of pollutants to surface water, unless alternative technologies implemented under alternative performance standards are designed to handle mortalities; and
- Maintain on-site a complete copy of the records specified in 40 CFR

412.37(b) and (c). These records must be available to the permitting authority and the Regional Administrator, or his or her designee, for review upon request. Records must be maintained for 5 years from the date they are created.

What did EPA propose? EPA proposed to establish effluent guidelines that include the requirements promulgated in today's rule, and that would also have required all Large beef and dairy CAFOs (including heifers) to prevent discharges to the ground water beneath the production area (animal confinement areas, manure stockpiles, and impoundments) where there is a direct hydrologic connection to surface waters.

What were the key comments? EPA received numerous comments on the proposed inclusion of ground water monitoring and protection requirements for beef and dairy CAFOs. Many commenters opposed the proposed ground water requirements, stating that EPA lacks the authority to regulate ground water contamination in this rule and that the cost to comply with the proposed requirements would threaten the viability of these operations. The commenters also felt that EPA would need to define the term "direct hydrologic connection to surface water" if ground water requirements were to be implemented. EPA also received comments supporting the inclusion of ground water requirements in this rule, arguing that individual State programs are not always protective of these types of discharges.

EPA received a number of comments suggesting the rule should allow for less frequent inspections of the production area; should establish effluent limitations that would allow CAFOs to discharge treated manure, litter, and process wastewaters (as opposed to the requirements in the 1974 ELGs based on the containment of these wastes); and should allow CAFOs to dispose of mortalities in surface impoundments designed for that purpose. Other commenters stated that EPA should retain the existing zero discharge requirement established by the 1974 ELGs and should not allow CAFOs to discharge the wastes they currently must contain, even if the wastes are treated before being discharged.

Rationale. The production area requirements established today for Large beef, dairy, and heifer CAFOs will provide effective control of discharges of manure and other process wastewaters to surface water. These requirements are widely demonstrated as achievable and are in use at most beef, dairy, and heifer CAFOs and the containment requirements included in

this rule have been applicable to Large CAFOs since they were promulgated in the 1974 ELGs. Furthermore, USDA and ASAE cite the 25-year, 24-hour rainfall event as part of the standard to which storage structures should be constructed.

CAFOs must properly design, operate, and maintain storage structures to contain all manure, litter, and process wastewater including the runoff from a 25-year, 24-hour rainfall event. The determination of the necessary storage volume should reflect the maximum length of time anticipated between emptying events. The design storage volume must reflect manure, wastewater, and other wastes accumulated during the storage period; normal precipitation less evaporation on the surface area during the entire storage period; normal runoff from the facility's drainage area during the storage period; 25-year, 24-hour precipitation on the surface (at the required design storage volume level) of the facility; 25-year, 24-hour runoff from the facility's drainage area; residual solids after liquids have been removed; necessary freeboard (USDA's Natural Resources Conservation Service (NRCS) recommends a minimum of 1 foot of freeboard); and, in the case of treatment lagoons, a minimum treatment volume necessary to allow anaerobic treatment to occur. Additional storage may also be required to meet management goals or other regulatory requirements. For example, if the permitting authority needs further controls to assure compliance with site-specific water quality standards. EPA encourages CAFOs to consider relevant ASAE and NRCS standards as one method to ensure appropriate design and construction.

CAFOs should actively operate and maintain the manure storage structure, including solids removal or dewatering when appropriate, to retain the capacity for the 25-year, 24-hour rainfall event. Recent studies suggest proper operation and maintenance will prevent most, if not all, overflows and discharges from manure storage areas. One recent study from Iowa State University suggested 76 percent of earthen manure structures lacked appropriate accompanying management and maintenance activities. Another study in North Carolina stated more than 90 percent of violations were attributed to operation and management deficiencies. Other studies also list typical shortcomings as including: careless transfer of manure to application equipment; improper manure agitation practices; inadequate controls to prevent burrowing animals and plants from eroding the storage

berms and sidewalls; lack of routine inspection of land application and dewatering equipment during lagoon drawdown; and infrequent visual confirmation of adequate freeboard. Therefore, this rule establishes certain record keeping requirements that document the design basis for the structures, inspection and other maintenance activities related to the operation of the structures, and any overflows that occur. These records will help the CAFO operator to demonstrate that any overflows that do occur are consistent with the proper operation and maintenance of storage structures designed to contain all process wastewater, including the runoff from a 25-year, 24-hour rainfall event.

Although most CAFOs already have containment structures properly sized to contain their process wastes and the contributions from rainfall up to a 25-year, 24-hour rainfall event, many of these operations are not properly maintaining their systems to retain the capacity for such a rainfall event. Therefore, today's rule specifies that surface and liquid impoundments (e.g., lagoons, ponds, and tanks) are required to have depth markers installed. The depth marker indicates the maximum volume that should be maintained under normal operating conditions allowing for the volume necessary to contain the 25-year, 24-hour rainfall event. Without such a depth marker, a CAFO operator might allow lagoons and other impoundments to fill to a level such that the capacity to contain the direct precipitation and runoff from a 25-year, 24-hour rainfall event is not maintained, leading to overflows that are inconsistent with the proper operation and maintenance of the system. In addition, closed or covered liquid impoundments are required to have depth markers installed to properly maintain these storage systems, such that dry weather discharges do not occur. Depth markers are necessary tools that allow operators to actively manage (e.g., dewater, remove solids) the liquid levels in their impoundments and ensure that adequate capacity is retained for the 25-year, 24-hour rainfall event. Remote sensors can also be used to monitor liquid levels in lagoons and impoundments. This sensor technology can be used to monitor changes in liquid levels, either rising or dropping levels. These sensors can also trigger an alarm when the level is changing rapidly or when the liquid level has reached a critical level. The alarm can transmit to a wireless receiver to alert the CAFO owner or operator and can also alert the permitting authority. The

advantage of this type of system is the real-time warning it can provide the CAFO owner or operator that a lagoon or impoundment is in danger of overflowing. It can provide the CAFO operator an opportunity to better manage operations and prevent catastrophic failures. These sensors are more expensive than depth markers; however, the added assurance they provide in preventing catastrophic failures might make them attractive to some operations.

Today's rule prohibits the disposal of dead animals in any liquid impoundments or lagoons and requires operations to handle dead animals in ways that prevent contributing pollutants to waters of the United States, except as provided for by alternative performance standards using technologies designed to handle mortalities. Improper disposal of mortalities can lead to surface or ground water contamination, or both, as well as noxious odors and the potential for disease transmission by scavengers and vermin. Historically, burial was the most common method of carcass disposal, but it is now prohibited in many States. By prohibiting the disposal of dead animals in liquid impoundments, this rule will eliminate the discharge of pollutants from carcasses in overflows and in the runoff from land application areas.

Weekly inspections ensure that any storm water diversions at the production area, such as roof gutters or any devices that channel storm water to the wastewater and manure storage and containment structure, are free from debris. Daily inspections of the automated systems providing water to the animals ensure they are not leaking or spilling, which by increasing the rate at which process wastewater is generated can lead to discharge of pollutants to surface water. The manure storage or treatment facility must be inspected weekly to ensure structural integrity. For surface and liquid impoundments, the berms must be inspected for leaking, seepage, wind or water erosion, excessive vegetation, unusually low or high liquid levels, reduced freeboard, depth of the manure and process wastewater in the impoundment as indicated by the depth marker, and other signs of structural weakness. EPA believes these inspections are necessary to ensure proper maintenance of the production area and prevent discharges of manure, litter, and other process wastewater to surface waters.

Records of these inspections must be maintained on-site, as well as records documenting any problems noted and

corrective actions taken, the design basis for the structures, and the estimated volume of any overflows that occur. The depth of all liquid manure storage impoundments must be noted during each week's inspection. Production area inspection data allow operators to actively manage and maintain their surface and liquid impoundments to ensure the structural integrity of the system and avoid catastrophic failure of such systems. These records also assist the CAFO operator to minimize discharges to the extent possible and demonstrate that any overflows that do occur are consistent with the proper operation and maintenance of storage structures to contain all process wastewater including the runoff from a 25-year, 24-hour rainfall event.

As with the land application requirements, effluent limitations in the form of BMPs are particularly suited to the regulation of CAFOs. For many CAFOs, controlling discharges to surface waters is largely associated with controlling runoff and controlling overflows from manure storage structures. CAFO runoff can be highly intermittent and is usually characterized by very high flows occurring over relatively short time intervals. Whether the runoff or overflow will lead to a discharge, as well as the volume of any discharge that does occur and the nature of the pollutants present in the discharge, can vary substantially depending on the operating practices and physical characteristics of the operation (*e.g.*, paved vs. unpaved surfaces, manure handling practices, climate, amount of area exposed to the precipitation). For these reasons, EPA has determined that relying exclusively on numeric ELGs to control these discharges is infeasible.

EPA believes the production area BMPs included in this rule are necessary to ensure proper maintenance of the production area and prevent discharges, except whenever precipitation causes an overflow of process wastewater from a facility designed, constructed, and operated to contain all manure, litter, and process wastewaters plus the runoff from a 25-year, 24-hour rainfall event. There are numerous reports of operations discharging pollutants from the production area during dry weather; discharges from CAFOs that failed to maintain the required storage capacity to contain the 25-year, 24-hour rainfall; and instances of leakage and catastrophic failure of lagoons and other manure storage structures. Information in the record for this rule indicates that many of the discharges could have been

avoided if CAFOs had practiced the BMPs in this rule frequently enough to detect and correct discrepancies before they led to discharges.

The proposed rule would have imposed explicit national requirements for certain CAFOs to address possible discharges to surface water via ground waters that have a direct hydrologic connection to surface waters. These operations would have been required to sample groundwaters to demonstrate that there is no discharge through a direct hydrologic connection to surface waters, unless they determined to the satisfaction of the permitting authority the absence of a direct hydrologic connection. Where a direct hydrologic connection to surface waters exists, controls on discharges to groundwater would have been required.

In today's effluent limitation guidelines, EPA is rejecting establishing requirements related to discharges to surface water that occur via ground water with a direct hydrologic connection.

Pollutant discharges from CAFOs to surface water via a groundwater pathway are highly dependent on site-specific variables, such as topography, climate, distance to surface water, and geologic factors such as depth of groundwater, soil porosity and permeability, and subsurface structure. The factors affecting whether such discharges are occurring at CAFOs are so variable from site to site that a national technology-based standard is inappropriate. Further, given the site-specific nature of these situations, quantifying the pollutant reduction associated with nationally-established requirements would be difficult. Imposing requirements through a national ELG could divert resources from other technologies and practices that are more effective at controlling CAFO discharges to surface waters. Therefore, EPA believes that requirements limiting the discharge of pollutants to surface water via groundwater that has a direct hydrologic connection to surface water are beyond the scope of today's ELGs.

Furthermore, EPA recognizes there are scientific uncertainties and site-specific considerations with respect to regulating discharges to surface water via groundwater with a direct hydrologic connection to surface water. EPA also recognizes there are conflicting legal precedents on this issue. Nothing in this rule shall be construed to expand, diminish, or otherwise affect the jurisdiction of the Clean Water Act over discharges to surface water via groundwater that has

a direct hydrologic connection to surface water.

At the time of proposal, EPA considered, but rejected, requiring CAFOs to sample surface waters adjacent to feedlots and/or land under control of the feedlot to which manure is applied. This option would have required CAFOs to sample surface waters both upstream and downstream from the feedlot and land application areas following significant rainfall. In this final rule, EPA is continuing to reject imposing surface water monitoring requirements on CAFOs through the effluent guidelines because of concerns regarding the difficulty of designing and implementing through a national rule an effective surface water monitoring program that would be capable of detecting, isolating, and quantifying the pollutant contributions reaching surface waters from individual CAFOs; and because the addition of in-stream monitoring does not by itself achieve any better controls on the discharges from CAFOs than the controls imposed by this rule. In-stream monitoring could be an indicator of discharges occurring from the CAFO; however, unless conditions are appropriate and a well-designed sampling protocol is established, it is equally possible that the in-stream monitoring considered at proposal would measure discharges occurring from adjacent non-CAFO agricultural sources. These non-CAFO sources would likely be contributing many of the same pollutants considered under the sampling option. EPA considered alternative parameters that would isolate constituents from CAFO manure and wastewater from other possible sources contributing pollutants to a stream. Pathogens were considered as potential indicator parameters that could be used if adjacent operations do not also have livestock or are not using manure or biosolids as fertilizer sources. As discussed in the preamble for the proposed rule, however, there are concerns about the ability of CAFOs to collect and analyze samples for these pollutants (unless the sampling program is appropriately designed and tailored to the CAFO) because of the technical difficulty in obtaining representative samples and because of holding time constraints on collected samples associated with the analytical methods for these parameters. Accordingly, EPA believes that the imposition of in-stream monitoring requirements is more appropriately addressed through NPDES permit conditions established by the permitting authority. Although EPA has rejected the inclusion of in-stream

monitoring requirements in this rule, the permitting authority retains the authority to include them in NPDES permits as either technology-based requirements based on BPT, or water quality-based requirements, where the permitting authority determines they are necessary.

Another option considered, and rejected, at proposal would have required large dairy (and swine) operations to install anaerobic digester systems to treat their manure. Requiring anaerobic digester systems was not considered for beef and heifer operations because the wastes from these facilities would not support the operation of digester systems. (Refer to the *Technical Development Document* for more information on the operation of digester systems.) As discussed at proposal, anaerobic digesters offer certain benefits to CAFOs (e.g., energy recovery, control of methane emissions), but they would not necessarily lead to significant reductions for many of the pollutants discharged to surface waters from CAFOs. Mandating the use of anaerobic digesters could divert resources from or complicate the installation of other technologies that can achieve even better performance. Further, use of an anaerobic digester does not eliminate the need for liquid impoundments to store dairy parlor water and barn flush water and to capture storm water runoff from the open areas at the dairy. Digesters do not necessarily reduce the nutrients in animal wastes. Most of the phosphorus removed from the effluent is concentrated in the digested solids, which are still subject to land application requirements. Similarly, metals present in the animal waste are not reduced and remain in the digester effluent and solids.

Although the ELG requirements in this rule are not specifically designed to reduce the pathogens in animal wastes, today's rule may achieve some reductions of pathogens in CAFO discharges by applying manure at rates that ensure appropriate agricultural utilization of nutrient and establishing setbacks or buffers where manure, litter, and other process wastewater are not applied. Pathogen die-off can also occur during the period manure is stored prior to land application, and further die-off of pathogens is expected to occur when the animal waste is exposed to sunlight following application to land. Because of the presence of pathogens in animal wastes and the potential risk they pose to human health and the environment, EPA continues to be concerned about the potential for transmission of pathogenic disease from CAFOs. This

concern is substantiated by information in the rulemaking record regarding instances of foodborne and waterborne disease outbreaks. However, based on the current state of the science, a quantified link has not been established between pathogenic diseases outbreaks and CAFO discharges and runoff. EPA has a number of research efforts underway to better understand and reduce the environmental impact resulting from the discharge and runoff of manure from these facilities. This research will help inform future decisions to address pathogens in CAFO discharges.

d. What are the production area requirements for Large swine, poultry, and veal CAFOs (Part 412, Subpart D)?
(1) Existing Large swine, poultry and veal CAFOs. Today's final rule establishes ELGs for existing swine, poultry, and veal operations that are the same as those described above in Section IV.C.2.c. for beef and dairy operations. Consistent with the 1974 ELG regulation, EPA is continuing to establish BMPs for the CAFO production area, which includes the animal confinement areas and the manure storage and containment areas. These BPT, BCT, and BAT requirements are being established for the reasons discussed in this section, and consistent with the factors for consideration under the Clean Water Act, as discussed in Sections II.A.2 and IV.C.2.f of this preamble.

EPA is retaining the current effluent guidelines that apply to swine, poultry, and veal operations, and adding language extending these requirements to immature swine, and to chicken operations with dry litter management practices. These regulations, which are codified at 40 CFR Part 412, Subpart D, prohibit the discharge of manure, litter, and other process wastewater, except for allowing discharge when rainfall causes an overflow from a facility designed, maintained, and operated to contain all manure, litter, and process wastewaters, including storm water, plus runoff from the 25-year, 24-hour rainfall event. In addition, today's rule requires Large CAFOs to comply with certain BMPs described above in Section IV.C.2.c.

What did EPA propose? EPA proposed to establish production area effluent guidelines for existing swine, poultry, and veal operations that would prohibit all discharges from CAFO production areas. Under the proposed rule, existing operations subject to the requirements of Part 412, Subpart D, would not have been allowed to discharge any manure, litter, or other process wastewaters, including the overflow of manure and other process

wastewaters from their containment systems.

What were the key comments? EPA received comments both opposing and supporting the proposed requirements that would have eliminated the allowance for overflows for swine, poultry, and veal CAFOs. Many commenters opposed to eliminating the overflow allowance argued that the cost to comply with such requirements would threaten the viability of their operations. Some stakeholders also stated that the use of impermeable lagoon covers (as a means for achieving compliance with the proposed requirements) would pose a number of operational challenges: freezing, biogas collection, clean storm water management, wind shear, cover repair, and disposal of spent covers. For these reasons, these stakeholders concluded the proposed zero discharge standard was technologically infeasible.

Rationale. The production area requirements established today for existing Large swine, poultry, and veal CAFOs will provide effective control of discharges of manure and other process wastewaters to surface water, consistent with the statutory factors the Clean Water Act requires EPA to consider in establishing effluent guidelines for existing sources (BPT, BCT, and BAT). These requirements are widely demonstrated as technologically achievable for these operations, and the containment requirements included in this rule have been applicable to Large CAFOs since they were promulgated in the 1974 ELGs. Further, USDA and ASAE cite the 25-year, 24-hour rainfall event as part of the standard to which storage structures should be constructed.

CAFOs must properly design, operate, and maintain storage structures to contain all manure, litter, and process wastewater including the runoff from a 25-year, 24-hour rainfall event. The determination of the necessary storage volume should reflect the maximum length of time anticipated between emptying events. The design storage volume must reflect manure, wastewater, and other wastes accumulated during the storage period; normal precipitation less evaporation on the surface area during the entire storage period; normal runoff from the facility's drainage area during the storage period; 25-year, 24-hour precipitation on the surface (at the required design storage volume level) of the facility; 25-year, 24-hour runoff from the facility's drainage area; residual solids after liquids have been removed; necessary freeboard (NRCS recommends a minimum of 1 foot of freeboard); and, in

the case of treatment lagoons, a minimum treatment volume necessary to allow anaerobic treatment to occur. Additional storage may also be required to meet management goals or other regulatory requirements. EPA encourages CAFOs to use relevant ASAE and NRCS standards as one method to ensure appropriate design and construction. This is also consistent with EPA's approach to estimating the costs of compliance with today's rule.

CAFOs should actively operate and maintain the manure storage structure, including solids removal or dewatering when appropriate, to retain the capacity for the 25-year, 24-hour rainfall event. Recent studies suggest proper operation and maintenance will prevent most, if not all, overflows and discharges from manure storage areas. One recent study from Iowa State University suggested 76 percent of earthen manure structures lacked appropriate accompanying management and maintenance activities. Another study in North Carolina stated more than 90 percent of violations were attributed to operation and management deficiencies. Other studies also list typical shortcomings as including: careless transfer of manure to application equipment; improper manure agitation practices; inadequate controls to prevent burrowing animals and plants from eroding the storage berms and sidewalls; lack of routine inspection of land application and dewatering equipment during lagoon drawdown; and infrequent visual confirmation of adequate freeboard. Therefore this rule establishes certain recordkeeping requirements that document the design basis for the structures, inspection and other maintenance activities related to the operation of the structures, and any overflows that occur. These records will help the CAFO operator to demonstrate that any overflows that do occur are consistent with the proper operation and maintenance of storage structures designed to contain all manure, litter, and process wastewater, including the runoff from a 25-year, 24-hour rainfall event.

As with the land application requirements, effluent limitations in the form of BMPs are particularly suited to the regulation of CAFOs. For many CAFOs, controlling discharges to surface waters is largely associated with controlling runoff and controlling overflows from manure storage structures. CAFO runoff can be highly intermittent and is usually characterized by very high flows occurring over relatively short time intervals. Whether the runoff or overflow will lead to a discharge, as well as the volume of any

discharge that does occur and the nature of the pollutants present in the discharge, can vary substantially depending on the operating practices and physical characteristics of the operation (e.g., paved vs unpaved surfaces, manure handling practices, climate, amount of area exposed to the precipitation).

EPA believes the production area BMPs included in this rule are necessary to ensure proper maintenance of the production area and prevent discharges except whenever precipitation causes an overflow of process wastewater from a facility designed, constructed, and operated to contain all manure, litter, and process wastewaters plus the runoff from a 25-year, 24-hour rainfall event. There are numerous reports of operations discharging pollutants from the production area during dry weather, discharges from CAFOs that failed to maintain the required storage capacity to contain the 25-year, 24-hour rainfall, and instances of leakage and catastrophic failure of lagoons and other manure storage structures. Information in the record for this rule indicates that many of the discharges could have been avoided if CAFOs had practiced the BMPs in this rule frequently enough to detect and correct discrepancies before they led to discharges.

For today's rule, EPA has determined that the cost to retrofit the many manure storage structures with covers, or to convert wet manure systems to dry manure systems, or to install other control techniques to achieve total containment of manure, litter, and other process wastewaters is not economically achievable for this subcategory. According to EPA's cost and economic impact analyses, requiring existing Large CAFOs subject to Part 412, Subpart D to comply with requirements for total containment (with no allowance for overflows) would result in facility closures at 11 percent of the CAFOs in Subpart D. (See the *Economic Analysis*.) EPA disagrees, however, with the comments that lagoon covers are technologically infeasible. EPA does agree that retrofitting existing lagoon systems with covers can pose substantial design challenges and some existing lagoons might need to be redesigned to accommodate a cover, substantially increasing the retrofit cost for existing sources. In spite of these design challenges and the operational challenges that covering lagoons can pose, EPA believes the record information on the demonstration status of impermeable lagoon covers adequately addresses these feasibility concerns. EPA has data from several

vendors; one such vendor has developed more than a dozen such systems ranging in size from 3 acres to almost 20 acres. Covered lagoon systems have been successfully implemented in areas with cold climates such as northern Illinois, South Dakota, and Wisconsin, and in high-rainfall areas such as South Carolina, North Carolina, and Georgia. These systems are routinely exposed to and resist freezing, high winds, and other extreme weather events. EPA believes the information in the record demonstrates the technological feasibility of covering lagoons, but is rejecting BPT/BCT/BAT requirements based on such technology because they are not economically achievable.

EPA is not including ground water controls and monitoring requirements, or surface water monitoring requirements for Subpart D facilities for the same reasons described in Section IV.C.2.c for beef and dairy operations. EPA also rejected basing the effluent guidelines for swine operations on anaerobic digesters for the same reasons given above for dairies, and as discussed in the preamble for the proposed rule.

(2) *New Large swine, poultry and veal CAFOs.* In today's rule, EPA is establishing effluent guidelines for new swine, poultry, and veal operations based on zero discharge from CAFO production areas, subject to the provision that if a new source's waste management and storage facilities are designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 100-year, 24-hour rainfall event, it will satisfy the requirements of the NSPS. In addition, today's rule requires Large CAFOs to comply with certain BMPs described above in Section IV.C.2.c for the reasons given in Section IV.C. The NSPS requirements are being established for the reasons discussed in this section, and consistent with the factors for consideration under the Clean Water Act, as discussed in Sections II.A.2 and IV.C.2.f of this preamble.

What did EPA propose? EPA proposed to establish production area requirements for new sources that would have required zero discharge, and that would also have required all new Large swine, poultry, and veal CAFOs with a direct hydrologic connection to surface waters to prevent discharges to the ground water beneath the production area (animal confinement areas, manure stockpiles, and impoundments).

What were the key comments? Most comments received focused on the

technological feasibility of total containment and the appropriateness of establishing ground water controls as part of the effluent guidelines. EPA received numerous comments in opposition to the proposed ground water requirements, stating that EPA lacks the authority to regulate ground water contamination in this rule and that the cost to comply with the proposed requirements would threaten the viability of these operations. The commenters also felt that EPA would need to define the term "direct hydrologic connection to surface water" if ground water requirements were to be implemented. EPA also received comments supporting the inclusion of ground water requirements in this rule, arguing that individual State programs are not always protective of these types of discharges.

Many commenters were also opposed to the proposed requirement that eliminates the allowance for overflows for swine, poultry, and veal CAFOs. Many commenters argued that the cost to comply with these requirements would threaten the viability of their operations. Some stakeholders felt impermeable lagoon covers in particular posed a number of operational challenges: Freezing, biogas collection, clean storm water management, wind shear, cover repair, and disposal of spent covers. For these reasons, these stakeholders concluded the proposed zero discharge standard was technologically infeasible.

Rationale. EPA has determined that the NSPS requirements included in this rule for the production area at new swine, poultry, and veal sources are technologically feasible and will not pose a barrier to entry, for the reasons discussed below and in the Technical Development Document.

A number of the comments opposed to establishing zero discharge limitations (with no allowance for the discharge of overflows) were related to concerns that unforeseeable events could eventually lead to a discharge from a facility and result, in the commenters' view, in a situation of noncompliance that the CAFO would be unable to prevent. EPA disagrees with these comments and believes the NPDES permitting regulations already address this concern. Consistent with existing provisions included in the NPDES regulations at 40 CFR 122.41, upset and bypass provisions are included as standard conditions in NPDES permits to address the potential for unforeseen circumstances and provide CAFOs with a reasonable defense. In other words, even though the NSPS for Subpart D operations

prohibits discharges from the production area, a CAFO can claim an upset/bypass defense for events that are beyond reasonable control, including extreme weather events as well as other uncontrollable or unforeseen conditions.

An upset is an unintentional noncompliance event occurring for reasons beyond the reasonable control of the permittee. The upset provision in the NPDES permit operates as an affirmative defense to prosecution for violation of technology-based effluent limitations, provided certain specified criteria are met. *See* 40 CFR 122.41(n). For example, flood damage or other severe weather damage to containment structures that cannot reasonably be avoided or controlled by the permittee could be a basis for an affirmative defense for an upset. A bypass, on the other hand, is an act of intentional noncompliance during which waste treatment facilities are circumvented under certain specified circumstances, including emergency situations. The bypass provision authorizes bypassing to prevent loss of life, personal injury, or severe property damage where there are no feasible alternatives to the bypass and where the permitting authority is properly notified. *See* 40 CFR 122.41(m).

EPA has added a reference at 40 CFR 412.46(3) to the existing regulatory provisions at 40 CFR 122.41(m) and (n) for upset and bypass. The upset and bypass provisions apply by existing regulation to all NPDES permits. In light of the more stringent requirements for new sources subject to Subpart D, EPA added this cross-reference to ensure that CAFO operators and permit writers were aware that the upset and bypass provisions are available. Upset and bypass conditions are applicable to all NPDES permits, for new and existing sources.

EPA has determined that total containment for the production area for new swine, poultry, and veal sources is technologically feasible and should not pose a barrier to entry for new sources subject to Subpart D. It is common for new poultry, veal, and swine operations to construct facilities that keep the animals in total confinement (covered housing) that is not exposed to rainfall or storm water runoff. In addition, many new operations are based on manure handling systems that greatly reduce or eliminate water use, such as hog and poultry high-rise houses, or that contain manure in covered or indoor facilities, such as underhouse pit storage systems and litter storage sheds. Other new facilities may choose flush systems with

lagoons that are covered or sited and designed to achieve total containment.

EPA recognizes that CAFOs may use different technologies to meet the zero discharge standard and that these technologies may have slightly different vulnerabilities to extreme weather events. Therefore, EPA is clarifying in today's rule that a CAFO may meet the zero discharge standard by designing, constructing, operating, and maintaining its waste management and storage facilities to contain all manure, litter, and process wastewater including the direct precipitation and runoff from a 100-year, 24-hour rainfall event.

By definition, a 100-year, 24-hour storm is an event which occurs on average once every 100 years. EPA believes that the 100-year, 24-hour rainfall event criteria provides the protection of the resource that the Agency intended under the zero discharge limitation, while providing clarity for the regulated community. The principle of tying regulatory or program requirements to precipitation-related events that happen with a frequency of once every 100 years is also used in other federal programs. For example, the Federal Emergency Management Agency uses the 100-year flood as the standard for floodplain management and to determine the need for flood insurance in the National Flood Insurance Program. The USDA Natural Resources Conservation Service (NRCS) uses the 100-year design criteria for flood protection structures. For instance, if the potential failure of a water control structure is likely to cause loss of life or extensive high value crop or property damage, NRCS uses the 100-year frequency storm as the basis for design.

CAFOs may choose to meet the zero discharge requirement through any technology designed to achieve this threshold. If a facility is designed, constructed, operated, and maintained to meet the 100-year, 24-hour rainfall criterion, and it nonetheless has a discharge due to extreme weather, this would not be considered a violation of its permit conditions. This provision is separate from an upset defense discussed above.

EPA has carefully evaluated the concerns raised in comments regarding the technical feasibility of total containment at swine, poultry, and veal operations. The concerns raised by commenters are primarily associated with operational factors and the effect of climate on the use of lagoon covers. Although the effluent guideline does not require the use of any specific technology, EPA concludes that the total containment requirements of this rule could be met at new sources through the

use of lagoon covers or other appropriate technologies. New sources will avoid the design challenges and retrofit costs that existing sources would face with the use of lagoon covers, should they choose that technology to comply. Based on the information in the record, and as discussed above in this section, EPA has received data to demonstrate that each of these factors has been successfully handled at CAFOs and other facilities. Furthermore, by retaining all manure, litter, and other process wastewaters within the building (for example, by using underhouse pits) and not using an outdoor liquid impoundment, or by using other appropriate technologies, such as a lagoon designed to contain the precipitation and runoff from a 100-year, 24-hour rainfall event, new sources can avoid the operational challenges posed by covers.

In many instances, CAFOs are expected to construct swine and poultry housing that maintains the manure in dry form and stores the dry manure under cover until it is hauled off-site or land applied. Dry manures are generally more marketable and easier to transport, important considerations for facilities with insufficient land for agronomic use of the manures. The majority of poultry operations use total confinement housing practices, generating a dry manure that is collected within the poultry houses. The manure/litter is removed periodically from the poultry houses and is either taken directly to the land application area, transported to off-site fields or centralized processing facilities (e.g., pelletizing operations), stored on-site within a roofed facility, or stored in temporary field stacks which can be covered and configured to prevent contact with precipitation. There has also been a great deal of interest in dry manure systems for swine operations in recent years, as evidenced by the current use of hoop structures and other designs described in the Technical Development Document. Dry manure systems are widely used at swine operations in Europe and are also being used at some operations in Canada. Some operations in the U.S. already use dry manure systems and EPA expects that the U.S. swine industry will choose to construct dry manure systems at new operations with greater frequency as they gain greater experience with these designs.

In other instances, new swine operations will likely choose underhouse deep pit systems to comply. Contrary to standard practice 30 years ago, closed buildings with underhouse deep pits are currently the predominant production technology used at swine

operations. By 1995, approximately half of all large swine operations were using under floor pits with slotted floors. In 2000, more than 2,200 large swine operations nationwide utilized under floor pits, with several hundred additional operations using slurry storage. EPA has learned through site visits, as supported by meetings with the National Pork Producers Council (a trade association) that, because of further technological advancements, newly constructed systems rarely include lagoons, and that closed buildings with under floor pits are now the predominant production technology. Given the widespread use of this design, EPA anticipates that a number of new operations constructed in the next five to ten years will choose to use deep pit systems.

Some new swine operations may choose to use lagoon-based or other wet systems, depending on the factors specific to their situation. For example, some new operations may choose to rely on covered lagoon systems (with gas flaring or energy recovery). Another alternative technology that may be selected would be to install an anaerobic digester followed by a covered lagoon for storing the digester effluent. Benefits to operators using anaerobic digesters include the cost savings (or even revenue, in some cases) from electricity generation, a better-stabilized waste, significant odor reduction, and improved marketability of the digester solids. During site visits conducted during the rulemaking EPA has observed the use of aboveground fiberglass-lined steel tanks to store swine wastes. When configured to exclude direct precipitation or to contain all direct precipitation and runoff from a 100-year, 24-hour rainfall event, these tanks are able to meet the zero discharge requirement. As noted below in section IV.C.2.e, in order to provide appropriate flexibility to CAFOs, alternative technologies that achieve overall environmental performance across all media equal or superior to the reductions that would be achieved under the zero discharge standard may also be authorized by the Director.

EPA is aware of some interest by the swine industry in achieving total containment by using uncovered lagoons that would not be expected to discharge to surface waters based upon siting and lagoon design. For example, by providing additional freeboard in the design, a facility with sufficient containment to retain all manure, litter, and process wastewater plus the direct precipitation and runoff from a 100-year, 24-hour rainfall event would

be able to demonstrate that it complies with the rule requirements, assuming proper operation and management. Such facilities would be considered to achieve zero discharge. As discussed above, an upset defense could also apply when unforeseen and uncontrollable conditions result in a discharge.

The production area BMPs established today for Large swine, poultry, and veal CAFOs are necessary to ensure proper operation and maintenance of the production area and provide effective control of discharges of manure, litter, and other process wastewaters to surface water. There are numerous reports of operations discharging pollutants from the production area during dry weather, discharges from CAFOs that failed to maintain the required storage capacity, and instances of leakage and catastrophic failure of lagoons and other manure storage structures. CAFOs should actively operate and maintain the manure storage structure, including solids removal or dewatering when appropriate, to retain the capacity to accommodate continued generation of process wastewater. Information in the record for this rule indicates that many of the discharges could have been avoided if CAFOs had practiced the BMPs in this rule frequently enough to detect and correct discrepancies before they led to discharges.

EPA is not including ground water controls and monitoring requirements, or surface water monitoring requirements for Subpart D facilities for the same reasons described in Section IV.C.2.c for beef and dairy operations. EPA also rejected basing the effluent guidelines for swine operations on anaerobic digesters for the same reasons described above for dairies, and as discussed in the preamble for the proposed rule.

e. Voluntary alternative performance standards to encourage innovative technologies. EPA's long-term environmental vision for CAFOs includes continuing research and progress toward environmental improvement. The Agency believes that certain individual CAFOs will voluntarily develop and install new technologies and management practices equal to or better than those required by baseline technology-based effluent guidelines (BPT, BCT, and BAT) and standards (NSPS) promulgated in today's rule. Furthermore, EPA recognizes that some CAFOs, as well as land grant universities, State agencies, equipment vendors, and agricultural organizations, are working to develop new technologies that achieve

reductions in nutrient and pathogen losses to surface water, ammonia and other air emissions, and ground water contamination. The development of new technologies offers the potential to match or surpass the pollutant reduction that would be achieved by compliance with the baseline production area effluent guidelines and standards (discussed above in Section IV.C.2.c for Large CAFOs subject to Part 412, Subpart C, and Section IV.C.2.d for Large CAFOs subject to Part 412, Subpart D). The term "baseline effluent guidelines" as used here is defined below in the following section of this preamble.

In addition to the production area effluent guidelines promulgated by today's rule (the "baseline effluent guidelines"), EPA is establishing provisions for the development of alternative performance standards for discharges from the production area of Large CAFOs. The effluent guidelines promulgated today also establish BMPs that apply to the production area and land application areas at Large CAFOs. These BMP requirements are applicable to all Large CAFOs (both existing and new sources), regardless of whether their NPDES permit limitations are based on the baseline effluent guidelines or the alternative performance standards.

In establishing the ELG provisions for alternative performance standards, this rule creates a framework that enables new and existing Large CAFOs in Subpart C and existing Large CAFOs in Subpart D to develop and implement new technologies and management practices that perform as well as or better than the baseline effluent guidelines at reducing pollutant discharges to surface waters from the production area. For new Large CAFOs in Subpart D, the rule allows for alternative permit limitations based upon site-specific innovative technologies that achieve environmental performance across all media which is equal or superior to the baseline standards. An added benefit of providing for alternative performance standards is the potential for new or alternative technologies and practices to help address the multimedia environmental issues confronting CAFOs. A key tenet of these programs is that CAFOs will now have the option to either accept NPDES permit limitations based on the baseline effluent guidelines or voluntarily request the permitting authority to establish an alternative BPT/BCT/BAT/NSPS performance standard as the basis for their technology-based NPDES permit limits (e.g., inclusion of effluent

limitations in their NPDES permits that are different from those based on the baseline effluent guidelines).

EPA received suggestions from a number of stakeholders on the merits of creating a framework for alternative performance standards. Several stakeholders believe that the effluent guidelines established by the 1974 ELG regulation, as well as the baseline effluent guidelines promulgated in today's rule, discourage the use of innovative treatment and pollution prevention technologies because they are based on containment rather than treating the wastes to particular targets of effluent quality. A number of commenters expressed support for alternative wastewater treatment technologies that are equivalent to or better than baseline effluent guidelines, and they specifically requested that EPA establish provisions in the rule to allow CAFOs to discharge treated process wastewater generated from the production area of the CAFO.

Commenters also suggested that EPA's regulatory framework should provide incentives encouraging CAFOs to use technologies that would protect all environmental media, including air, ground water, and surface water. Commenters suggested that adding flexibility in the rule to allow for the discharge of treated process wastewater could lead to better approaches for addressing multimedia environmental concerns. On a related note, a number of stakeholders commented that EPA should include controls for pathogens or antibiotics, as well as atmospheric emissions of ammonia, methane, and hydrogen sulfide.

In view of these comments and recognizing the potential environmental gains presented by the ongoing research and development of new treatment technologies for CAFO wastes, today's rule establishes provisions providing for the development of alternative performance standards for discharges from Large CAFOs. As noted above, CAFOs retain the option to either accept NPDES permit limitations based on the baseline effluent guidelines or voluntarily request the permitting authority to establish an alternative performance standard as the basis for their technology-based NPDES permit limits. The specific requirements imposed by the alternative performance standard would be established by the NPDES permitting authority based on the technical analysis and other information submitted by the CAFO, as required under the alternative performance standards provisions included in Part 412. CAFOs would not be required to enter the alternative

performance standards program. A Large CAFO choosing not to participate in the alternative performance standards program would instead be subject to the baseline effluent guidelines discussed above in Section IV.C.2.c (for Subpart C) or Section IV.C.2.d (for Subpart D). EPA previously used a similar approach in establishing the effluent guidelines regulations for the Pesticide Formulating, Packaging, and Repackaging (PFPR) industry. In that rule, PFPR facilities are subject to effluent guidelines requirements that prohibit all discharges, but they may voluntarily elect to instead adopt certain regulatory requirements (mandatory BMPs and treatment of discharged wastes) and be allowed to discharge a "pollution prevention allowable discharge." (See 40 CFR Part 455. See also 61 FR 57518; November 6, 1996.) In another rulemaking, EPA established effluent guidelines for the pulp, paper, and paperboard (Pulp & Paper) industry that provide incentives for mills to voluntarily implement advanced process technologies. For the Pulp & Paper effluent guidelines, mills accepting more stringent NPDES permit limitations based on the performance of the advanced technologies and other process improvements are granted incentives such as public recognition and substantially extended compliance periods. (See 40 CFR Part 430. Also see 63 FR 18504, 18593–18611; April 15, 1998).

(1) Baseline effluent guidelines. The effluent guidelines regulations promulgated in today's rule for all existing Large CAFOs, and for new source Large beef, dairy and heifer CAFOs, prohibit the discharge of process wastewaters, except when rainfall events cause an overflow from a facility designed, constructed, and operated to contain all manure, litter, and process wastewaters plus the runoff from a 25-year, 24-hour rainfall event. These limitations are based on the use of storage ponds and lagoons to contain the process wastes and runoff, although they do not preclude CAFOs from using alternative technologies. The NSPS requirements for new source Large swine, poultry, and veal CAFOs require zero discharge from the production area, subject to a provision that compliance with the standard can be met if the waste management and storage facilities are designed, constructed, operated, and maintained to contain all manure, litter, and process wastewater including the runoff and direct precipitation from a 100-year, 24-hour rainfall event. The ELGs were established on the basis of factors specified in CWA sections 304(b)

and 306, including the cost of achieving the effluent reductions and any non-water quality environmental impacts. These limitations are referred to in this preamble as the "baseline effluent guidelines" for the purpose of clarifying which effluent guidelines requirements may be replaced by the alternative performance standards provisions included in today's rule.

The effluent guidelines promulgated today also establish BMPs that apply to the production area and land application areas at Large CAFOs. These BMP requirements are applicable to all Large CAFOs (both existing and new sources), regardless of whether their NPDES permit limitations are based on the baseline effluent guidelines or the alternative performance standards. As discussed in Sections IV.C.2.c and IV.C.2.d, the production area BMPs are necessary to ensure that manure storage structures and other production area components associated with controlling process wastewaters (e.g., storm water diversions) are properly designed, operated, and maintained to prevent overflows or catastrophic failure of the system.

(2) Voluntary alternative performance standards for all Large beef/dairy/heifer CAFOs and existing Large swine/poultry/veal CAFOs. The alternative performance standards promulgated today for new and existing sources in Subpart C and existing sources in Subpart D, apply to discharges of manure, litter, and other process wastewaters from the CAFO production area. Under the provisions included in the final rule, these Large CAFOs will be allowed to discharge process wastewater that has been treated by technologies that the CAFO demonstrates will result in equivalent or better pollutant removals than would otherwise be achieved by the baseline effluent guidelines. These regulatory provisions are targeted toward the CAFO's wastewater discharges, but EPA encourages operations electing to participate in the alternative performance standards program to consider environmental releases holistically, including opportunities for achieving improvement in multiple environmental media.

As discussed above, the baseline effluent guidelines, though nominally zero discharge, allow for untreated overflow discharges if the system is designed, constructed, and operated to contain manure, litter, and process wastewater plus the runoff from a 25-year, 24-hour rainfall. (Large swine, poultry, and veal CAFOs that are new sources are subject to a different performance standard.) To demonstrate

that an alternative control technology would achieve equivalent or better pollutant reductions than the baseline effluent guidelines, the CAFO must submit a technical analysis, which includes calculating the pollutant reductions based on the site-specific modeled performance of a system designed to comply with the baseline effluent guidelines (e.g., a storage lagoon designed, constructed, and operated to contain all manure, litter, and process wastewaters plus the runoff from a 25-year, 24-hour rainfall event). For many pollutants (e.g., nitrogen, phosphorus, BOD, metals), the mass of pollutants discharged will usually be the most appropriate measure for assessing treatment system performance and determining whether the alternative control technology will achieve equal or better pollutant reductions. For some pollutants such as pathogens, however, pollutant mass may not be the most appropriate measure of pollutant reductions and alternative measures will need to be used.

One approach for making such a demonstration is to use a computer simulation model to evaluate site-specific or region-specific climate data, along with wastewater characterization data, to determine the pollutant discharge that would be projected for a system designed, constructed, and operated to achieve compliance with the baseline effluent guidelines. The model would evaluate the daily inputs to the storage system, including all process wastes, direct precipitation, and runoff. It would also evaluate the daily outputs from the storage system, including losses due to evaporation, sludge removal, and the removal of wastewater for use on cropland at the CAFO or transport off site. The model would be used to predict the overflow from the storage system that would occur over a 25-year period, and these overflow predictions would be used to determine the median annual predicted overflow over the 25 years evaluated by the model.

Precipitation patterns for a given location are inherently variable from year-to-year. As a result, the volume of water entering the storage system, either through direct precipitation or as collected runoff, will vary substantially from one year to another. The potential for the storage system to overflow and the volume of the overflow is a function of site-specific variables, including the rate and total volume of wastes entering and leaving the storage system. To enable the development of alternative performance standards that achieve pollutant reductions comparable to those that would be achieved by the

baseline effluent guidelines, CAFOs must perform a technical analysis that includes a prediction of the volume of overflows from the storage system. If the technical analysis were to be performed using climate data from a period of unusually high precipitation, then the CAFO's analysis would tend to overestimate the overflow volume and result in alternative performance standards that do not achieve pollutant reductions equal to the baseline effluent guidelines. Conversely, if the technical analysis were to be performed using climate data from a period of unusually low precipitation (e.g., drought periods), then the CAFO's analysis would tend to underestimate the overflow volume. By requiring the CAFO to use precipitation data for a 25-year period, the technical analysis will minimize the bias introduced by short-term variations in climate patterns.

The site-specific or other appropriate pollutant characterization data for the wastewater from the waste storage system (i.e., the overflow) would be coupled with the overflow volume output from the model described above to predict the quantity of pollutant discharge that would occur from a system designed to comply with the baseline effluent guidelines. CAFOs would be required to meet NPDES permit conditions that result in equivalent or improved pollutant reductions, as compared to the predicted quantity of pollutant discharge from overflow of the baseline system. If a CAFO elected to use this approach, it would be meeting the same limitations as a CAFO under the baseline effluent guidelines, but expressed in a different fashion (e.g., numeric limits on a continuous discharge versus a limit of zero discharge with an allowance for discontinuous overflows). To illustrate this type of analysis, EPA prepared an example evaluation using model farm characteristics. This example is available in the *Technical Development Document* and in section 19.6.2 of the rulemaking record.

(3) *Voluntary superior environmental performance standards for new Large swine/poultry/veal CAFOs.* The NSPS requirements that apply to production area discharges at new Large swine, poultry, and veal CAFOs are more stringent than the NSPS established for other new sources and the BAT requirements for existing sources. EPA is endeavoring to ensure that this rule does not inadvertently discourage approaches that are superior from a multimedia environmental perspective. Therefore, for new sources subject to Subpart D (Large swine, poultry, and

veal CAFOs), EPA is establishing alternative performance standards that provide additional compliance flexibilities specifically designed to encourage CAFOs to adopt innovative technologies for managing and/or treating manure, litter, and process wastewater. Specifically, the NSPS includes a provision that allows for the CAFO to request the Director to establish alternative NPDES permit limitations based upon a demonstration that site-specific innovative technologies will achieve overall environmental performance across all media which is equal to or superior to the reductions achieved by baseline standards. The quantity of pollutants discharged from the production area must be accompanied by an equivalent or greater reduction in the quantity of pollutants released to other media from the production area (e.g., air emissions from housing and storage), the land application areas for all manure, litter, and process wastewater at on-site and off-site locations, or both. In making the demonstration that the innovative technologies will achieve an equivalent or greater reduction, the comparison of quantity of pollutants is to be made on a mass basis where appropriate.

In general, EPA expects CAFOs will conduct a whole-farm audit to evaluate releases that occur at the point of generation to minimize or eliminate waste production and air emissions, followed by an evaluation of the waste handling and management systems, and ending with an evaluation of land application and off-site transfer operations. The specific technologies that CAFOs will select and adopt to achieve the pollutant reductions are expected to be most effective for the particular operation. As part of the demonstration the CAFO will need to present information that describes how the innovative technologies will generate improvement across multiple environmental media. The Director has the discretion to request additional supporting information to supplement such a request where necessary. Such information could include criteria and data that demonstrate effective performance of the technologies and that could be used to establish the alternative NPDES permit limitations.

(4) *Process and incentives for participating in alternative performance standards.* CAFOs interested in pursuing the alternative performance standards should have a good compliance history, e.g., no ongoing violations of existing permit performance standards or history of significant noncompliance. These facilities must conduct an analysis of

their operation (as described above in Sections IV.C.2.e.(2) and IV.C.2.e.(3)) and prepare a proposed alternative program plan including the results of the analysis; the proposed method for implementing new technologies and practices, including an approach for monitoring performance; and the results demonstrating that these technologies and practices perform equivalent to or better than the baseline effluent guidelines. This plan must be included with the CAFO's NPDES permit application or renewal, and it will be incorporated into the permit upon approval by the permitting authority.

CAFOs are expected to derive substantial benefits from participation in the alternative standards approach, through greater flexibility in operation, increased good will of neighbors, reduced odor emissions, and potentially lower costs. EPA is considering future opportunities for other possible incentives to encourage participation in this program.

f. *How did EPA consider the Clean Water Act statutory factors in establishing the ELGs?* (1) BPT. In establishing BPT effluent guidelines for an industry category, EPA looks at a number of factors in determining the appropriate effluent limits for conventional, toxic, and non-conventional pollutants. EPA first considers the cost of achieving effluent reductions in relation to the effluent reduction benefits. The Agency also considers the age of the equipment and facilities, the processes employed and any required process changes, engineering aspects of the control technologies, non-water quality environmental impacts (including energy requirements), and such other factors as the Agency deems appropriate. 33 U.S.C. 304(b)(1)(B). Traditionally, EPA establishes BPT effluent limitations based on the average of the best performances of facilities within the industry of various ages, sizes, processes or other common characteristics. EPA's consideration of these factors and how they affected this rulemaking is presented in the *Technical Development Document*.

One way that EPA takes these factors into account is by breaking down categories of industries into separate classes of similar characteristics. The division of a point source category into groups called "subcategories" provides a mechanism for addressing variations among products, raw materials, processes, and other parameters that can result in distinct effluent characteristics. This provides each subcategory with a uniform set of ELGs that take into account technology achievability and

economic impacts unique to that subcategory. In this rule, EPA has addressed such considerations by establishing two new subcategories, codified at Subpart C (beef, dairy, and heifers) and Subpart D (swine, poultry, and veal) of 40 CFR 412. See Section IV.C.2.a of the preamble for a discussion of these subcategories.

The requirements established in this rule for BPT effluent guidelines reflect consideration of the total cost of applying these technologies (including BMPs) in relation to the effluent reduction benefits that will be achieved. The ELGs promulgated today are expected to cost Large CAFOs \$283 million per year (pre-tax). The ELGs will reduce discharges of sediment by 2.1 billion pounds, nutrients by 155 million pounds, and metals by one million pounds annually. This results in an overall ratio of \$0.12 per pound of pollutant removed (using reductions of sediment, nutrients, and metals). Excluding sediment reductions, the rule achieves an overall ratio of \$1.75 per pound of pollutant removed (nutrients and metals).

The technologies upon which BPT is based are ones that are readily applicable to all CAFOs and will provide effective control of discharges of manure, litter, and other process wastewaters to surface water. These requirements are widely demonstrated as achievable and represent the level of control achieved by the majority of Large CAFOs. The containment requirements included in this rule have been applicable to Large CAFOs since they were promulgated in the 1974 ELGs, and most existing lagoons and other containment structures are built to these standards. Furthermore, USDA and ASAE cite the 25-year, 24-hour rainfall event as part of the standard to which containment structures should be constructed.

As described in Section IV.C.2.b of this preamble, the land application requirements included in this rule represent practices that will ensure that CAFOs apply manure, litter, and other process wastewaters at a rate and in a manner consistent with the appropriate agricultural utilization of nutrients. Limits on the rate at which manure can be applied and certain other constraints on application practices, such as setbacks and vegetated buffers, are widely demonstrated as achievable and have been imposed by a number of States and through NPDES permits.

(2) BCT. In evaluating the possible BCT standards in this rulemaking, EPA first considered whether there are any candidate technologies (*i.e.*, technology options) that are technologically feasible

and achieve greater reductions in conventional pollutants than are achieved by the BPT requirements promulgated today. (Conventional pollutants are defined as TSS, BOD, pH, fecal coliform, and oil and grease.) EPA's analyses of pollutant reductions that can be achieved by the candidate options (including the BPT, BAT, and NSPS options) has focused largely on the control of nutrients, sediments, metals, and pathogens, but to the extent possible have also assessed the effectiveness of the control options at reducing discharges of conventional pollutants. Although animal wastes contain BOD because of the organic material present in these wastes, the data available for estimating reductions of BOD from application of the candidate technologies are limited. Therefore, EPA based its estimates of conventional pollutant reductions on TSS, using estimated reductions in sediment discharges as a surrogate for TSS. Following this approach, EPA identified no BCT technology option that achieves greater TSS removals than the BPT requirements promulgated today, and EPA does not believe the candidate BCT options would substantially reduce discharges of BOD. EPA therefore concluded that there are no candidate BCT technologies for establishing limits on conventional pollutants that are more stringent than BPT, and is establishing BCT requirements in this rule equal to BPT. If EPA had identified technology options appropriate for a national rule that achieve greater reductions of conventional pollutants than are achieved by BPT, then EPA would have performed the two-part BCT cost test. (See 51 FR 24974 for a description of the methodology EPA employs when setting BCT standards.)

(3) BAT. In general, BAT represents the best available economically achievable performance of direct discharging facilities in the industrial subcategory or category. The Clean Water Act requires EPA to consider a number of different factors when developing ELGs that represent the BAT level of control for discharges of toxic and nonconventional pollutants by a particular industry category. These factors include the cost of achieving effluent reductions, the age of equipment and facilities involved, the processes employed, engineering aspects of the control technology, potential process changes, non-water quality environmental impacts (including energy requirements), and other factors as the Administrator deems appropriate. EPA's consideration of

these factors and how they affected this rulemaking is presented in the *Technical Development Document*.

An additional statutory factor considered in setting the BAT requirements is economic achievability. Generally, the achievability is determined on the basis of the total cost to the industrial subcategory and the overall effect of the rule on the industry's financial health. The BAT requirements promulgated today are economically achievable and represent the best available technology for Large CAFOs. As was discussed above for BPT, EPA estimates the cost for Large CAFOs to comply with the ELGs at \$283 million per year (pre-tax, \$2001). The ELGs will reduce discharges of sediment by 2.1 billion pounds, nutrients by 155 million pounds, and metals by one million pounds annually. (These costs and pollutant reductions are not additional costs beyond that of BPT. Because the BPT and BAT requirements promulgated today are identical, the costs and pollutant reductions for each level of control are presented incremental to the baseline of current practices and current regulatory requirements.)

The technologies upon which BAT is based are ones that are readily applicable to all CAFOs and will provide effective control of discharges of manure, litter, and other process wastewaters to surface water. The containment requirements, in conjunction with the production area BMPs included in this rule, are widely demonstrated as achievable and represent the level of control demonstrated to be achievable by well-performing Large CAFOs. The containment requirements included in this rule have been applicable to Large CAFOs since they were promulgated in the 1974 ELGs, and most existing lagoons and other containment structures are built to these standards. Furthermore, USDA and ASAE cite the 25-year, 24-hour rainfall event as part of the standard to which storage structures should be constructed.

As described in Section IV.C.2.b of this preamble, the land application requirements included in this rule are consistent with appropriate agricultural utilization of nutrients and will ensure that CAFOs apply manure, litter, and other process wastewaters at a rate and in a manner necessary to meet the requirements of the crops grown and not exceed the ability of the soil and crop to absorb nutrients. Limits on the rate at which manure can be applied and certain other constraints on application practices, such as setbacks and vegetated buffers, are widely

demonstrated as achievable and have been imposed by a number of States and through NPDES permits.

To determine economic achievability, EPA analyzed how many facilities affected by this rule would experience financial stress severe enough to make them vulnerable to closure. As explained in more detail in Section VIII of this preamble and in the *Economic Analysis*, the number of facilities experiencing stress might indicate whether certain regulatory options considered during the rulemaking are economically achievable, subject to other considerations.

For the veal, dairy, turkey, and egg laying sectors, the final regulations are not expected to result in any CAFO-level business closures. In the beef cattle, heifer, swine and broiler sectors, however, the final rule is expected to cause some existing CAFOs to experience financial stress. These operations may be vulnerable to closure as a result of complying with the final rule. Across all sectors, an estimated 285 existing Large CAFOs may be vulnerable to facility closure. This accounts for approximately 3 percent of all Large CAFOs. By sector, EPA estimates that 49 beef operations (3 percent of affected beef CAFOs), 204 hog operations (5 percent of affected hog CAFOs), 10 broiler operations (1 percent), and 22 heifer operations (9 percent) may close as a result of complying with the final rule.

(3) NSPS. NSPS reflect effluent reductions that are achievable based on the best available demonstrated control technology. New facilities have the opportunity to install the best and most efficient production processes and wastewater treatment technologies. As a result, NSPS represents the greatest degree of effluent reduction attainable through the application of the best available demonstrated control technology for all pollutants (*i.e.*, conventional, non-conventional, and priority pollutants). In establishing NSPS, EPA is directed to take into consideration the cost of achieving the effluent reduction and any non-water quality environmental impacts and energy requirements. In addition, EPA evaluates whether the requirements would impose a barrier to entry to new operations.

The technologies upon which the production area NSPS for Large beef, dairy, and heifer CAFOs are ones that are readily applicable to all CAFOs in that subcategory and will provide effective control of discharges of manure, litter, and other process wastewaters to surface water. The containment requirements, in

conjunction with the production area BMPs included in this rule, are widely demonstrated as achievable and represent the level of control demonstrated to be achievable by well-performing Large CAFOs covered by Part 412, Subpart C. The containment requirements included in this rule have been applicable to Large CAFOs since they were promulgated in the 1974 ELGs, and most existing lagoons and other containment structures are built to these standards. Furthermore, USDA and ASAE cite the 25-year, 24-hour rainfall event as part of the standard to which containment structures should be constructed.

EPA has determined that total containment (with a compliance option to design, operate, and maintain the facility to contain the runoff from a 100-year, 24-hour rainfall event) for the production area for new swine, poultry, and veal sources (and the production area BMPs) is technologically feasible and will not pose a barrier to entry for new sources subject to Subpart D. It is common for new poultry, veal, and swine operations to construct facilities that keep the animals in total confinement. In addition, many new operations are based on manure handling systems that greatly reduce or eliminate water use, such as hog and poultry high-rise houses, or that contain manure in covered or indoor facilities, such as underpit storage systems and litter storage sheds. EPA has carefully evaluated the concerns raised in comments regarding the technical feasibility of total containment at swine, poultry, and veal operations. The concerns raised by commenters are primarily associated with operational factors and the effect of climate on the use of lagoon covers. New sources will avoid the design challenges and retrofit costs that existing sources would face with these requirements. Based on the information in the record, and as discussed above, EPA has received data to demonstrate that each of these factors has been successfully handled at CAFOs and other facilities. Therefore, EPA concludes that the total containment requirements of this rule could be met through the use of lagoon covers if facilities choose to do so. However, by retaining all manure and process wastewater within the building (for example, by using underhouse pits) and not using an outdoor liquid impoundment, these operations will avoid the operational challenges posed by covers. Additional compliance flexibility is provided by the provision that allows the zero discharge standard to be met by designing, constructing,

operating, and maintaining waste management and storage facilities to contain all manure, litter, and process wastewater including the runoff and the direct precipitation from a 100-year, 24-hour rainfall event.

The land application requirements included in this rule for all Large CAFOs that are new sources are identical to those established under BAT for existing sources and are consistent with appropriate agricultural utilization of nutrients. These land application requirements will ensure that CAFOs apply manure, litter, and other process wastewaters at a rate and in the manner necessary to meet the requirements of the crops grown and not exceed the ability of the soil and crop to absorb nutrients. Limits on the rate at which manure can be applied and certain other constraints on application practices, such as setbacks and vegetated buffers, are widely demonstrated as achievable and as the best available demonstrated control technology, and have been imposed by a number of States and through NPDES permits.

EPA evaluated economic impacts to new source CAFOs by comparing the costs borne by new source CAFOs to those estimated for existing sources. That is, if the expected cost to new sources is similar to or less than the expected cost borne by existing sources (and that cost was considered economically achievable for existing sources), then EPA considers the regulations for new sources do not impose requirements that might grant existing operators a cost advantage over new CAFO operators and further determines that the NSPS is affordable and does not present a barrier to entry for new facilities. In general, costs to new sources for complying with a given set of regulatory requirements are lower than the costs for existing sources to comply with the same requirements since new sources are able to apply control technologies more efficiently than existing sources that may incur high retrofit cost. New source CAFOs will be able to avoid the retrofit costs that will be incurred by existing sources. For example, the cost of a model total containment system for swine that would meet the no discharge requirement (*e.g.*, incremental cost of deep pit swine house, including land application) typically is less than the cost for an existing source to retrofit water intensive lagoon-based systems that are exposed to precipitation. Among the primary reasons for the capital cost difference for a new source with total containment is that it does not include an impoundment lagoon,

and it experiences reduced operating costs because it handles less waste with substantially lower water and higher solids content than a water-intensive lagoon-based system. New sources may be able to avoid many of the other control costs facing some existing producers through careful site selection, such as choosing to locate at a site with sufficient available land nearby for applying manure. Furthermore, other technologies are available to new sources, that have been implemented by existing sources, that are also capable of achieving the no discharge standard.

See section IV C above for further discussion of other technologies. Since the new source requirements for Subpart C are the same as the corresponding existing source requirements, EPA concludes that the NSPS requirements promulgated today do not present a barrier to entry for new facilities. For Subpart D facilities, where the new source requirements are more stringent than the existing source requirements, EPA concludes that the NSPS requirements do not pose a barrier to entry because of the currently widespread use of animal confinement practices and waste management technologies that can comply with the zero discharge standard, and because these total containment technologies and practices are less costly to implement than water-intensive systems (e.g., such as water flush waste management) that are exposed to precipitation. EPA costed for zero discharge technologies and showed that these would pose no barrier to entry. Now that operations can choose an alternative option that might be cheaper to implement, EPA believes that there is even less likelihood that there is a barrier to entry. More information is provided in the *Technical Development Document* and the *Economic Analysis* supporting the final regulations.

3. What Technology-Based Limitations Apply to Small and Medium CAFOs?

In today's final rule, small and medium-size AFOs that have been defined or designated as CAFOs by the permitting authority would not be subject to the effluent limitations guidelines and standards specified in part 412. (Refer to section IV.C.2.a. of this preamble for a discussion of the key public comments and EPA's final analysis for applying the effluent limitations guidelines only to Large CAFOs.) Rather, for Small and Medium CAFOs the permit writer would use BPI to establish, case by case, the appropriate technology-based requirements for each permit. The technology-based requirements must

address the production area and the land application area(s). Establishing permit limits for these facilities on a BPI basis, using 40 CFR 125.3 as a guide for the types of factors to consider, allows for the establishment of permit conditions that are tailored to and more directly address the site-specific conditions that led to the facility being defined or designated as a CAFO. In instances where technology-based requirements are not protective of water quality, the permit writer will also establish water quality-based effluent limits.

For the production area, the permitting authority must establish the technology-based limitations on the discharge of manure, litter, and process wastewater, including limitations where applicable based on the minimum duration and intensity rainfall event for which the CAFO can design and construct a system to contain all manure, litter, and process wastewater and storm water. Technical references from USDA and the American Society of Agricultural Engineers should be consulted for appropriate design factors to consider for containment structures. Typical design factors are: (1) Sludge volume, (2) treatment volume, (3) volume of manure and wastewater between drawdown events, (4) total volume for runoff and precipitation, and (5) the minimum duration and intensity rainfall event portion of (4).

For the land application area, the permitting authority must consider permit requirements that place technology-based limits on discharges resulting from the application of manure, litter, and process wastewater to land under the control of the CAFO owner or operator, including restrictions on the rates of application to ensure appropriate agricultural utilization of nutrients. In today's final rule, all CAFOs must develop and implement a nutrient management plan (as described in the next section).

4. Will CAFOs Be Required To Develop and Implement a Nutrient Management Plan?

Under today's final rule, NPDES permits for all CAFOs will require the development and implementation of a nutrient management plan. At a minimum, a nutrient management plan must include BMPs and procedures necessary to achieve effluent limitations and standards. The plan must, to the extent applicable, address the following minimum elements:

- Ensure adequate storage of manure, litter, and process wastewater, including procedures to ensure proper operation

and maintenance of the storage facilities;

- Ensure proper management of animal mortalities (i.e., dead animals) to ensure that they are not disposed of in any liquid manure, storm water, or process wastewater storage or treatment system that is not specifically designed to treat animal mortalities;

- Ensure that clean water is diverted, as appropriate, from the production area;

- Prevent direct contact of confined animals with waters of the United States;

- Ensure that chemicals and other contaminants handled on-site are not disposed of in any manure, litter, or process wastewater, or storm water storage or treatment system, unless specifically designed to treat such chemicals and other contaminants;

- Identify appropriate site specific conservation practices to be implemented, including as appropriate buffers or equivalent practices, to control runoff of pollutants to waters of the United States;

- Identify protocols for appropriate testing of manure, litter, process wastewater, and soil;

- Establish protocols to land apply manure, litter, or process wastewater in accordance with site specific nutrient management practices that ensure appropriate agricultural utilization of the nutrients in the manure, litter, or process wastewater; and

- Identify specific records that will be maintained to document the implementation and management of the minimum elements described above.

For Large CAFOs these minimum elements of a nutrient management plan must also meet the more detailed requirements in the part 412 effluent guidelines. For Small and Medium CAFOs, or other operations not otherwise subject to part 412 requirements for land application, the minimum elements of a nutrient management plan will be further specified in the permit, on a site specific basis, based on the best professional judgment of the permitting authority.

What did EPA propose? In the proposed rule, EPA introduced the concept of a "Permit Nutrient Plan" ("PNP"), and proposed that permits for all CAFOs would require the development and implementation of a PNP. For CAFOs not subject to the ELGs, the proposal called for the permitting authority to consider the need for a PNP.

The concept of a PNP, as opposed to the use of the term CNMP, was used by EPA to identify those specific aspects of a CNMP that would be required under

the proposed regulatory program. In the proposal EPA included a discussion documenting the relationship between a CNMP and a PNP. EPA also prepared, and made available for public review as a supporting document, a draft guidance document entitled *Managing Manure Nutrients at Concentrated Animal Feeding Operations* which provided information concerning the content of a PNP. The PNP was considered to be the subset of activities in a USDA defined CNMP that relate to compliance with the effluent discharge limitations and other requirements of the NPDES permit. EPA also proposed that it be developed, or reviewed and modified, by a certified specialist. The proposal would have required the PNP to be developed within 3 months of submitting either an NOI for coverage under an NPDES general permit or an application for an NPDES individual permit. CAFO operators would be required to notify the permitting authority when the PNP had been developed. EPA's position was that the content of a PNP was consistent with that of a CNMP and could be addressed in a single plan for a given operation.

What were the key comments? In general, commenters supported the concept of requiring the development and implementation of nutrient management plans by CAFOs. Although commenters generally supported the overall concept, many did not endorse the specific approach taken by EPA in the proposed rule. There was significant comment from stakeholders that the PNP would require the development of a separate plan in addition to a CNMP. Although EPA had intended the PNP to be a subset of information contained within a typical CNMP, not an independent or separate plan, a number of commenters misunderstood that point, and otherwise felt that the proposal would result in confusion in the regulated community.

The SBAR Panel noted the concerns of some small business representatives regarding the practical difficulties of ensuring that manure is always applied at agronomic rates. The Panel recommended that EPA continue to work with USDA to explore ways to limit permitting requirements to the minimum necessary to deal with such threats and to define what is "appropriate" land application consistent with the agricultural storm water exemption. The Panel agreed that if manure and wastewater are applied to land at agronomic rates and a facility is designed to contain the discharge from a 25-year, 24-hour storm, that facility would have minimal potential to discharge or adversely affect water

quality. However, it is also possible that an operation might land apply in excess of agronomic rates but still not discharge, depending on such factors as annual rainfall, local topography, and distance to the nearest stream. The Panel recommended that EPA consider such factors as it develops requirements related to land application.

The SBAR Panel also raised concerns related to the development and implementation of CNMPs, as well as specific requirements for applying nutrients at a phosphorous-based rather than a nitrogen-based rate in certain circumstances. Small business representatives expressed concerns about application of manure at phosphorus-based rates. The Panel noted the high cost of phosphorus-based application relative to nitrogen-based application and supported EPA's intent to require the use of phosphorus-based application rates only where necessary to protect water quality, if at all, keeping in mind its legal obligations under the Clean Water Act. If the soil is not phosphorus-limited, nitrogen-based application should be allowed. The Panel recommended that EPA consider leaving the determination of whether to require the use of phosphorus-based rates to BPJ, and continue to work with USDA in exploring such an option.

Rationale. In the March 1999 USDA/ EPA *Unified National Strategy for Animal Feeding Operations* EPA and USDA endorsed the concept of CNMPs for all AFOs. The Strategy acknowledged that the vast majority of these plans would be developed under voluntary programs while a limited number would be prepared under the regulatory program. In today's final rule, CAFOs, which represent only a small proportion of all AFOs, are required to have a nutrient management plan, and the nutrient management plan represents a subset of activities within a CNMP that are necessary for CWA regulatory purposes. EPA believes that this approach is consistent with the concepts in the Strategy.

EPA explained in section IV.C.2.b above that the BMPs specified in today's regulation, including the requirement to develop and implement a nutrient management plan, represent the minimum elements of an effective BMP program and are necessary to control the discharges of pollutants to surface waters. As discussed there, non-numeric effluent limitations consisting of BMPs are particularly suited to the regulation of CAFOs. In particular, EPA believes that it is generally infeasible to establish a numeric effluent limitation for discharges of land-applied CAFO waste. The factors that make a numeric

limitation infeasible include, among other things, that storm water discharges can be highly intermittent, are usually characterized by very high flows occurring over relatively short time intervals, and carry a variety of pollutants whose nature and extent vary according to geography and local land use. Accordingly, the final regulations at section 122.42(e) specify the need for a nutrient management plan for all CAFOs and the general elements that the plan must address.

For Large CAFOs, EPA has specified the need for a nutrient management plan as a non-numeric effluent limitation in the form of a BMP requirement under the final ELGs. For Small and Medium CAFOs, and other operations that are not subject to the CAFO effluent guidelines, authority to require a nutrient management plan exists under Clean Water Act sections 402(a)(1) and (2) and 40 CFR 122.44(k). EPA believes that a nutrient management plan requirement for the Small and Medium CAFOs is necessary in order to appropriately control discharges of pollutants and otherwise carry out the purposes and intent of the CWA. For these operations, EPA found it was appropriate for the final rule to specify, on a national basis, the requirement for a nutrient management plan and the general elements that the plan must address. In turn, the final rule allows the permitting authority to include, on a best professional judgment basis in light of more localized factors, more specific nutrient management plan requirements as necessary to ensure appropriate agricultural utilization of nutrients at the operation.

EPA has addressed the SBAR panel concerns by defining the scope of a nutrient management plan with reference to those elements necessary to ensure that manure is managed effectively insofar as they are related to possible discharges to surface water. Further, today's final rule requires land application rates based on the site-specific technical standards established by the Director.

EPA agrees that the use of the term PNP created unintended confusion. While EPA remains a strong advocate of the development of CNMPs the Agency recognized the need to address this confusion. In response to comments, EPA is relying on the more generic term, "nutrient management plan" in today's rule. By way of clarification, the nutrient management plan is a separate and distinct term that applies to the subset of activities in a USDA-defined CNMP that are required by the CAFO effluent guidelines or NPDES permit regulations. These requirements are

defined in today's rule as the minimum elements that all nutrient management plans, developed as a special condition of an NPDES permit, must meet. EPA expects that many CAFOs will satisfy the requirement to develop a nutrient management plan by developing a full CNMP, although a full CNMP is not required in today's regulations. The minimum measures of a nutrient management plan in today's final rule are consistent with the content of both the PNP as proposed by EPA and the CNMP as defined by USDA. EPA's position remains that the development and implementation of a full CNMP is one of the most effective methods for a permitted operation to demonstrate compliance with the nutrient management plan requirements required by this rule.

In today's rule, EPA is requiring all CAFOs to develop and implement a nutrient management plan by December 31, 2006, except that CAFOs seeking to obtain coverage under a permit subsequent to that date must have a nutrient management plan developed and implemented upon the date of permit coverage. This is consistent with the dates being established for the ELG. As discussed in section IV.C.2.b of this preamble, the ELGs promulgated today require Large CAFOs that are existing sources to implement the land application requirements at 40 CFR 412.4(c) by December 31, 2006 because that is the date when EPA is assured that the required planning is in fact available to the great number of regulated sources. For Large CAFOs that are new sources (*i.e.*, those commencing construction after the effective date of this rule), the land application requirements at 40 CFR 412.4(c) apply immediately.

EPA has similarly concluded that Small and Medium CAFOs subject to the NPDES provisions for nutrient management plans also, in general, will be unable to develop and implement a nutrient management plan by the date they will need to seek permit coverage under the requirements of this rule, for reasons of insufficient infrastructure. Therefore, EPA is requiring Small and Medium CAFOs to develop and implement NMP plans by December 31, 2006. As discussed in section IV.C.2.b, among other things, this time frame allows reasonable time for States to update their NPDES programs and issue permits to reflect the nutrient management plan requirements of today's rule and provides flexibility for permit authorities to establish permit schedules based on specific circumstances, including prioritization of nutrient management plan

development and implementation based on site-specific water quality risks and the available infrastructure for development of nutrient management plans. Refer to section IV.C.2.b for additional discussion on the time frame by which CAFOs must implement the land application requirements of 40 CFR 412.4(c).

Through the permit application process (every five years), a nutrient management plan will have to be reviewed and updated by the CAFO owner or operator. EPA recognizes that the nutrient management plan will be a dynamic document that might require updates more frequently than every five years. A site-specific nutrient management plan that reflects the current CAFO operation must be maintained on-site by the CAFO owner/operator. The most obvious factor that would necessitate an update to the nutrient management plan is a substantial change in the number of animals at the CAFO. A substantial increase in animal numbers (for example an increase of greater than 20 percent) would significantly increase the volume of manure and total nitrogen and phosphorus produced on the CAFO. As a result, the CAFO would need to reevaluate animal waste storage facilities to ensure adequate capacity and may need to reexamine the land application sites and rates. Another example of a reason for updating the nutrient management plan is a change in a CAFO's cropping program, which could significantly alter land application of animal waste. Changes in crop rotation or crop acreage, for instance, could significantly alter land application rates for fields receiving animal waste.

5. Does EPA Require Nutrient Management Plans To Be Developed or Reviewed by a Certified Planner?

Although EPA promotes and supports the use of certified specialists to help ensure the quality of nutrient management plans, the Agency is not requiring such plans to be developed or reviewed by a certified planner as part of this final rule.

What did EPA propose? EPA proposed the Permit Nutrient Plans be developed, or reviewed and modified, by a certified specialist. A certified planner was defined as someone who has been certified to prepare CNMPs by USDA or a USDA sanctioned organization.

What were the key comments? EPA received a number of comments on this provision. Many States support a State certification program where they would have the flexibility to develop their own

program. Some producers and environmental groups supported certified plans as outlined in the proposal. Many comments related to the cost of having a specialist develop or review a plan and whether there are enough specialists across the country to handle the volume of work. Some said that a certified plan would not achieve the goal of improved water quality. Others said that operators should be able to develop their own plan, noting that USDA tools and other resources are available to operators and a specialist is not needed. There was also concern that EPA was limiting the type of specialist by listing, in the proposal, examples of who might be a specialist.

Rationale. EPA agrees that certification programs are more appropriately developed by USDA or at the State level. State resources, coordination with local stakeholders, and State requirements relating to nutrient management are some of the factors that may influence State specific certification programs. EPA shares the concerns regarding the current capacity to develop up to 15,500 certified plans for CAFOs and meet the demands from a universe of 222,000 other AFOs requesting CNMPs through USDA's voluntary program. Currently, EPA does not have a reliable estimate on the number of certified specialists available for developing and implementing nutrient management plans. However, EPA recognizes that some States already have certification programs in place for nutrient management planning, and expects that the USDA and EPA guidance for AFOs and CAFOs will provide additional impetus for new and improved State certification programs. These programs provide an excellent foundation for producing qualified specialists for nutrient management planning. When all of these State certification programs are in place, EPA expects that there will be sufficient capacity to develop and implement the required nutrient management plans by the required regulation implementation date of December 31, 2006.

Although not required, EPA encourages CAFOs to make use of certified specialists with the expertise to develop high quality nutrient management plans. The purpose of using certified specialists is to ensure that effective nutrient management plans are developed and/or reviewed and modified by persons who have the requisite knowledge and expertise to develop nutrient management plans that meet the regulatory requirements and that are appropriately tailored to the site-specific needs and conditions at each CAFO. Interested parties should

consult with USDA, State Agricultural Departments, and their NPDES permitting authority regarding the availability of certified specialists and opportunities to be certified.

Under today's final rule operators may develop and implement their own nutrient management plan, and may themselves become certified nutrient management planners. In fact, EPA indicated in the SBAR Panel Report that it expected that many operators could become certified through USDA or land grant universities to prepare their own nutrient management plans. While no definitive number is currently available, results from preliminary draft studies indicate that the average CNMP cost per farm was \$7,276 per year. The list of sources in the proposal of who can provide CNMP certified specialists is there only as a sample list. It in no way precludes or prevents an operator from obtaining a CNMP from an alternate source.

6. What Are the Special Conditions Applicable to All NPDES CAFO Permits?

In today's rule EPA is defining two special conditions that are to be required in all NPDES CAFO permits: (1) CAFO owners or operators must develop and implement a nutrient management plan that addresses specific minimum elements and (2) the CAFO owner or operator must maintain permit coverage for the CAFO until there is no remaining potential for a discharge of manure, litter, or associated process wastewater other than agricultural storm water from land application areas, that was generated while the operation was a CAFO (*i.e.* proper closure). The special conditions in an NPDES permit are used primarily to supplement effluent limitations and ensure compliance with the Clean Water Act.

A discussion of the specific nutrient management plan requirements of today's rule, the key public comments and EPA rationale for requiring nutrient management plans is included in section IV.C.4 of this preamble.

In today's rule, EPA is adopting as final the proposal to require permitted CAFOs that lose their status as CAFOs (*e.g.*, they cease operations, or reduce their number of animals below the regulatory thresholds) to retain an NPDES permit until there is no remaining potential for a CAFO-generated discharge other than agricultural storm water from the land application areas. Should the facility's permit expire, the owner/operator would be required to reapply for an NPDES permit if the facility has not

been properly closed (*i.e.*, the facility still has a potential to discharge). Proper facility closure includes but is not limited to removal of water from lagoons and proper disposal or reuse of manure removed from storage areas such as pens, lagoons, and stockpiles. For CAFO facilities that down-size to become AFOs, proper closure of the CAFO is achieved when there is no longer a potential to discharge any manure, litter, or process wastewater generated while the operation was a CAFO.

What did EPA propose? In the proposal, the Agency discussed a variety of options for ensuring proper closure of CAFOs, including applying financial instruments, preparing closure plans, and, as adopted today, retaining an NPDES permit until the facility is properly closed.

EPA proposed two additional special conditions that are not being included in today's final rule. EPA proposed that the permit writer must consider whether to include special conditions to address (1) Timing restrictions on land application of manure or litter and wastewater to frozen, snow-covered, or saturated ground, and (2) conditions to control discharges to ground water with a direct hydrologic connection to surface water. Although today's rule does not include a national requirement for either of these issues to be regulated in the permit, the permitting authority may impose permit terms and conditions that address either of these issues on a case-by-case basis as appropriate. See section IV.C.2.b above for a discussion of the key comments on these two issues and EPA's reasons for not including either of them as national requirements in today's rule.

What were the key comments? Industry comments largely supported the proposal to require facilities to retain an NPDES permit until properly closed. Some environmental groups, U.S. Fish and Wildlife Service, some States and citizens preferred a closure plan with financial assurance, expressing concern that taxpayers end up paying to clean up abandoned lagoons, whereas this should be the responsibility of the CAFO operator. Some commenters opposed the closure requirement, stating that it was inconsistent with and more restrictive than NPDES requirements for other industry sectors. Others questioned the practical meaning of closure, as well as the practical ability of permit authorities to track such closed facilities.

Rationale. EPA's establishment of a minimum national standard for closure will help ensure the environmental risks associated with CAFO manure and

wastewater are minimized upon closure. Although EPA is not establishing financial surety measures, States may want to implement them as appropriate under their own authorities to prevent the environmental damage caused by facilities that are no longer in business. EPA concluded that requiring retention of an NPDES permit provides a far more effective tool for environmental protection than would simply requiring a closure plan that might, or might not, be effectively implemented.

In practical terms, how clean a facility must be to meet closure requirements that the operation no longer has a potential to discharge will be left to the permitting authority. EPA is not requiring CAFO facilities to post bonds to obtain an NPDES permit, nor does EPA calculate that closure costs are necessarily high. EPA assumes that disposal methods normal to the operation will be used to close out the facility.

The need to maintain NPDES coverage until proper closure of the CAFO is a result of the unique nature of CAFO facilities. As a part of their normal operation CAFOs may, among other things, have manure and litter storage structures, lagoons, and feed storage areas. The abandonment of any one of these has the potential for catastrophic environmental damage to waters of the U.S. As a result, to protect against unauthorized discharges, there is a need to maintain coverage of the facility under the NPDES permit until the facility is properly closed. Upon verification of the proper closure of the facility by the permitting authority there will be no need to retain the NPDES permit. The NPDES permit can then be terminated and there would be no longer any need to track the facility. EPA expects that the State permitting authority will cease to issue a permit based on evidence that the facility is properly closed. It is not expected that this will be a major burden to the States.

7. Standard Conditions Applicable to All NPDES CAFO Permits

Standard conditions in an NPDES permit are preestablished conditions that apply to all NPDES permits, as specified in 40 CFR 122.41. They include Duty to Comply, Duty to Reapply, Need to Halt or Reduce Activity Not a Defense, Duty to Mitigate, Proper Operation and Maintenance, Permit Actions, Property Rights, Duty to Provide Information, Inspection and Entry, Monitoring and Records, Signatory Requirement, Reporting Requirements, Bypass and Upset. Today's action does not make any changes to the standard permit

conditions, with respect to NPDES permits issued to CAFOs.

D. What Records and Reports Must Be Kept On-Site or Submitted?

Today's rule specifies the types of records to be kept on-site at the CAFO in accordance with the recordkeeping requirements section of the permit. Today's rule also specifies the types of monitoring to be performed, the frequencies for collecting samples or data, and how to record, maintain, and transmit the data and information to the permitting authority in accordance with the monitoring and reporting section of the permit.

The specific recordkeeping, monitoring, and reporting requirements in today's rule balance the need for information documenting permit compliance and minimizing the burden on the permittee to collect and record data. State permit authorities have the option to include more stringent requirements if they find such an action necessary. The minimum recordkeeping, monitoring, and reporting requirements that must be included in each NPDES permit are as follows:

Recordkeeping requirements. All CAFO operators must maintain a copy of the site specific nutrient management plan on site, and records documenting the implementation of the best management practices and procedures identified in the nutrient management plan.

In addition, Large CAFOs must maintain operation and maintenance records that document (a) visual inspections, inspection findings, and preventive maintenance needed or undertaken in response to the findings; (b) the date, rate, location, and methods used to apply manure or litter and wastewater to land under the control of the CAFO operator; (c) the results of annual manure or litter and wastewater sampling and analysis to determine the nutrient content; and (d) the results of representative soil sampling and analyses conducted at least every five years to determine nutrient content.

Large CAFOs must also maintain records of manure transferred to other persons that demonstrate the amount of manure and/or wastewater that leaves the operation and record the date, name, and address of the recipient(s);

Today's rule requires all CAFOs to submit an annual report that includes the following information:

- Number and type of animals confined (open confinement and housed under roof).
- Estimated amount of total manure, litter, and process wastewater generated

by the CAFO in the previous 12 months (tons/gallons);

- Estimated amount of total manure, litter, and process wastewater transferred to other persons by the CAFO in the previous 12 months (tons/gallons);
- Total number of acres for land application covered by the nutrient management plan;
- Total number of acres under control of the CAFO that were used for land application of manure, litter, and process wastewater in the previous 12 months;
- Summary of all manure and wastewater discharges from the production area that have occurred in the previous 12 months, including date, time, and approximate volume; and
- A statement indicating whether the current version of the CAFO's nutrient management plan was developed or approved by a certified nutrient management planner.

What did EPA propose? EPA proposed requirements to keep, maintain for five years, and make available to the Director or the Regional Administrator, records of inspections and manure sampling and analysis, records related to the development and implementation of a PNP, and records of off-site transfers of manure. EPA proposed that CAFO operators maintain records of off-site transfer and provide the recipient with a brochure on proper land application practices. EPA also proposed a small quantity exemption limit below which an operator would not have to keep records of manure transfers. EPA proposed operators submit a cover sheet and executive summary of their permit nutrient plans to the permitting authority. In addition, the Agency proposed to require operators to submit a written notification to the permitting authority, signed by a certified planner, that the PNP has been developed or amended and is being implemented. The proposal required annual review of the PNP and re-submission of the executive summary if there were any changes to the PNP.

Today's final rule changes the recordkeeping and reporting requirements that were proposed in the following ways: EPA is not requiring the CAFO owner or operator to provide the recipient of the manure with a brochure that describes the recipient's responsibilities for appropriate manure management, and EPA is not adopting the proposal to set a minimum quantity exemption, such that records of manure transfer would not be required below a certain quantity. In addition, EPA is no longer requiring CAFO operators to submit with the NOI a copy of the cover

sheet and executive summary of the CAFO operator's current Permit Nutrient Plan (PNP).

What were the key comments? EPA received a number of comments on the proposed recordkeeping, monitoring, and reporting requirements. The operators commented that monitoring and reporting programs are difficult to establish, expensive, and burdensome on the operator. They also claimed that these requirements would necessitate a significant amount of operator time and labor, and would provide opportunities for "technical" permit violations, with no benefit to water quality. Environmental groups and a majority of citizen commenters stated that these provisions are long overdue and any records submitted should be made available for public review.

The SBAR Panel recommended that EPA give careful consideration to all proposed recordkeeping requirements and explore options to streamline these requirements for small entities. Regarding the requirement to provide nutrient content information to manure recipients, the Panel believed that this would be minimally burdensome if analysis of this content is already required as part of the CNMP to ensure proper land application. The Panel suggested that EPA consider limiting any requirement to provide nutrient content analysis to situations where such analysis is required as part of the CNMP to ensure proper on-site land application, or possibly where the operator transfers manure to multiple recipients. Finally, the Panel noted that under the Paperwork Reduction Act and its implementing regulations, all reporting and recordkeeping requirements must be certified by the issuing agency to have practical utility and to reduce, to the extent practicable and appropriate, the burden on those required to comply, including small entities (5 CFR 1320.9).

Rationale. The recordkeeping, reporting, and monitoring requirements adopted today are necessary to demonstrate compliance with the requirements of today's rule and assure protection of water quality.

EPA is not requiring Small and Medium CAFOs to maintain records of the of the manure transferred off-site, or provide the recipient with an analysis of the nutrient content of the manure. As a result, these categories of CAFOs are relieved of the burden of keeping records of off-site transfer. EPA chose to provide regulatory relief for the Medium CAFOs by not requiring them to keep records of their manure transferred to third parties. EPA believes these CAFOs have more land and therefore ship less

manure off-site. EPA's goal is to track the majority of the manure that is transferred to third parties. This information kept by the large operations is sufficient for EPA needs.

EPA decided not to include a small quantity exemption for off-site transfer of manure in the final rule. The reason for the proposed exemption was to provide record keeping relief to small operators. However, EPA determined that effective implementation of the small-quantity exemption would itself have required considerable recordkeeping by the operator. Practically, then, including this exemption would not have significantly reduced the record keeping burden to small operators.

The annual report, which includes seven elements that are readily available to the CAFO owner/operator in the nutrient management plan, is being required in today's rule rather than the proposed PNP written notification, cover sheet and executive summary. The annual report gives the permitting authority information on the number of overflows occurring in a year (in order to verify compliance with the production area design requirements), the amount of manure generated, the amount of manure transferred off-site, and the number of acres available for land application. The annual report also provides information, such as the degree to which CAFOs are expanding and accounting for increased manure production, which is important to evaluate changes that might be needed to comply with permitting requirements. The final rule requires the permittee to indicate whether its plan was either written or reviewed by a certified CNMP planner. EPA is not requiring that a certified planner be used to develop or review the plan required under this rule. However, EPA believes that certified planners provide a valuable service in plan development such as consistency and improved plan quality. Knowledge of which plans were developed by a certified planner will help EPA focus its compliance assistance efforts and help States determine level of permit review needed for each facility. EPA has concluded that the annual report is a more effective method for ensuring permitting authorities and EPA have basic information documenting CAFO performance relative to permit requirements.

EPA disagrees with the public comments suggesting that the monitoring and reporting requirements do not provide any benefit to water quality. Monitoring and reporting provide the basis for CAFO operators

and permitting authorities to evaluate compliance with the requirements of today's rule and the associated environmental implications. Monitoring provides valuable benchmark information and subsequent data that a permittee can use to adjust its activities, better comply with the requirements of the permit, and thereby better control its runoff or potential runoff. Monitoring also provides documentation of the operation's activities, which is essential to determine whether regulatory requirements are being implemented effectively and the success of those activities in protecting water quality. Monitoring allows the permittee and the permitting authority to know what, if any, contribution the permittee is making to the degradation of water quality. Such information is also helpful in determining the improvements in water quality as a result of permit compliance activities.

In this final rule, EPA has made great efforts to reduce burden beyond what is noted above. EPA has eliminated all certifications that were proposed, which include middle category certification that a facility is not a CAFO, certification of off-site manure recipients, and the use of certified CNMP planners. In addition, EPA is not including a national requirement for operators to document that there is no direct hydrological connection from groundwater beneath their production area to surface waters (or add controls where there is such a connection).

V. States' Roles and Responsibilities

A. What Are the Key Roles of the States?

State regulatory agencies with authorized NPDES programs are principally responsible for implementing and enforcing today's rule. This final rule obligates NPDES permit authorities to revise their NPDES programs expeditiously and to issue new or revised NPDES permits to include the revised effluent guidelines and other permit requirements adopted today. In authorized States, their role would also include determinations for no potential to discharge (*see* section IV.B.2 of this preamble) and CAFO designation (*see* section IV.A.7 of this preamble) of AFOs as CAFOs.

Various State organizations, such as environmental agencies, agricultural agencies, conservation districts, play a central role in implementing voluntary and other programs (e.g., technical assistance, funding, public involvement, legal access to information, and setting protocols) that support the goal of protecting water quality through proper management of animal manure. EPA

fully expects and promotes effective cooperation between voluntary and regulatory programs to achieve this goal. In designing this final rule, EPA has placed the principal emphasis on Large CAFOs which are part of the base NPDES program. With this in mind, EPA is promoting and encouraging States to use the full range of voluntary and regulatory tools to address medium and small operations.

B. Who Will Implement These New Regulations?

The requirements of today's rule will be implemented by issuing NPDES permits. Today's rule will be implemented by States with authorized NPDES permit programs for CAFOs. As of the date of this final rule, there are 45 States and 1 Territory with authorized NPDES permit programs for CAFOs. In States without an authorized NPDES program for CAFOs and in Indian Country, EPA will implement the rule.

C. When and How Must a State Revise Its NPDES Permit Program?

NPDES regulations require State NPDES permitting programs to be revised to reflect today's changes within one year of the date of promulgation of final changes to the Federal CAFO regulations (*see* 40 CFR 123.62(e)). In cases where a State must amend or enact a statute to conform with the revised CAFO requirements, such revisions must take place within two years of promulgation of today's regulations. States that do not have an existing authorized NPDES permitting program but who seek NPDES authorization after these CAFO regulatory provisions are promulgated must have authorities that meet or exceed the revised federal CAFO regulations at the time authorization is requested.

Today's regulation requires States to have technical standards for nutrient management consistent with 40 CFR 412.4(c)(3). If the State already has nutrient management standards in place, it is sufficient to provide those to EPA along with the State's submission of regulatory revisions to conform to today's changes. If the State has not already established technical standards for nutrient management, the Director shall establish such standards by the date specified in § 123.62(e) and provide those to EPA along with the State's submission of regulatory revisions.

The NPDES program modification process is described at 40 CFR 123.62. Opportunities for public input into the process of review and approval of State program revisions and approvals is