

the basis that they do not discharge or discharge only in the event of a 25-year, 24-hour storm. Second, EPA is proposing to clarify that land application areas are part of the CAFO and any associated discharge from these areas is subject to permitting.

While these two proposed changes would help address the "duty to apply" issue, EPA does not believe they would go far enough. Even with eliminating the 25-year, 24-hour storm exemption from the CAFO definition, EPA is concerned that operations would still seek to avoid permitting by claiming they are "zero dischargers." Specifically, EPA has encountered a further zero discharge conundrum: A facility claims that by controlling its discharge down to zero—the very level that a permit would require—it has effectively removed itself from CWA jurisdiction, because the CWA simply prohibits discharging without a permit, so a facility that does not discharge does not need a permit. EPA believes this would be an incorrect reading of the CWA and would not be a basis for claiming an exemption from permitting (as explained directly below). Therefore, it is important to clarify in the regulations that even CAFOs that claim to be zero dischargers must apply for a permit.

To round out the basis for this proposed revision, EPA is proposing a regulatory presumption in the regulations that all CAFOs have a potential to discharge to the waters such that they should be required to apply for a permit. EPA believes this would be a reasonable presumption on two grounds. First, the Agency believes this is reasonable from a factual standpoint, as is fully discussed in section V of today's preamble.

This factual finding would become even more compelling under today's proposals to eliminate the 25-year, 24-hour storm exemption from the CAFO definition and to clarify that discharges from on-site land application areas, are considered CAFO point source discharges. If these two proposals were put in place, EPA believes, many fewer operations would be claiming that they do not discharge.

Second, a presumption that all CAFOs have a potential to discharge would be reasonable because of the need for clarity on the issues described above and the historical inability under the current regulations to effectuate CAFO permitting. Under today's proposal, the duty would be for each CAFO to apply for a permit, not necessarily to obtain one. A CAFO that believes it does not have a potential to discharge could seek to demonstrate as much to the

permitting authority in lieu of submitting a full permit application. (To avoid submitting a completed permit application, a facility would need to receive a "no potential to discharge" determination from the permit authority prior to the deadline for applying for a permit. See section VII.F.3 below.) If the demonstration were successful, the permitting authority would not issue a permit. Therefore, the duty to apply would be based on a rebuttable presumption that each facility has a potential to discharge. Without this rebuttable presumption, EPA believes it could not effectuate proper permitting of CAFOs because of operations that would claim to be excluded from the CWA because they do not discharge.

CWA authority for a duty to apply. In pre-proposal discussions, some stakeholders have questioned EPA's authority under the Clean Water Act to impose a duty for all CAFOs to apply for a permit. EPA believes that the CWA does provide such authority, for the following reasons.

Section 301(a) of the CWA says that no person may discharge without an NPDES permit. The Act is silent, however, on the requirement for permit applications. It does not explicitly require anyone to apply for a permit, as some stakeholders have pointed out. But neither does the Act expressly prohibit EPA from requiring certain facilities to submit an NPDES permit application or from issuing an NPDES permit without one. Section 402(a) of the Act says simply that the Agency may issue an NPDES permit after an opportunity for public hearing.

Indeed, finding that EPA could not require permitting of CAFOs would upset the legislative scheme and render certain provisions of the Act meaningless. Section 301(b)(2)(A), which sets BAT requirements for existing sources and thus is at the heart of the statutory scheme, states that EPA shall establish BAT standards that "require the elimination of discharges of all pollutants if the Administrator finds * * * that such elimination is technologically and economically achievable.* * *" In other words, Congress contemplated that EPA could set effluent standards going down to zero discharge where appropriate. Section 306, concerning new sources, contains similar language indicating that zero discharge may be an appropriate standard for some new sources. Section 402 puts these standards into effect by requiring EPA to issue NPDES permits that apply these standards and ensure compliance with them. Thus, the Act contemplates the issuance of NPDES permits that require

zero discharge. These provisions are underscored by Section 101(a) of the Act, which sets a national goal of not just reducing but eliminating the discharge of pollutants to the waters.

This statutory scheme would be negated if facilities were allowed to avoid permitting by claiming that they already meet a zero discharge standard that is established in the CAFO regulations and that a permit would require. Issuing a zero discharge standard would be an act of futility because it could not be implemented through a permit. Under a contrary interpretation, a CAFO could repeatedly discharge and yet avoid permitting by claiming that it does not intend to discharge further. EPA does not believe that Congress intended to tie the Agency's hands in this manner. To be sure, in no other area of the NPDES program are industrial operations allowed to avoid permitting by claiming that they already meet the limits that a permit would require. That would be a plainly wrong view of the Act; Section 301(a) states unequivocally that no person may discharge at all without a permit. The Act does not contemplate a different system for facilities that are subject to a zero discharge standard, and it is the unique nature of the zero discharge standard that makes it appropriate for EPA to require CAFOs to apply for permits.

EPA also finds authority to require NPDES permit applications from CAFOs in Section 308 of the Act. Under Section 308, the Administrator may require point sources to provide information "whenever required to carry out the objective of this chapter," for purposes, among other things, of determining whether any person is in violation of effluent limitations, or to carry out Section 402 and other provisions. Because EPA proposes a presumption that all CAFOs have a potential to discharge pollutants, it is important, and within EPA's authority, to collect information from CAFOs in order to determine if they are in violation of the Act or otherwise need a permit.

EPA solicits comment on the proposed duty to apply.

e. The Definitions of AFO and CAFO Would Include the Land Areas Under the Control of the Operator on Which Manure is Applied. In today's proposal, EPA defines an AFO to include both the animal production areas of the operation and the land areas, if any, under the control of the owner or operator, on which manure and associated waste waters are applied. See proposed § 122.23(a)(1). The definition of a CAFO is based on the AFO definition and thus would include the

land application areas as well. Accordingly, a CAFO's permit would include requirements to control not only discharges from the production areas but also those discharges from the land application areas. Under the existing regulations, discharges from a CAFO's land application areas that result from improper agricultural practices are already considered to be discharges from the CAFO and therefore, are subject to the NPDES permitting program. However, EPA believes it would be helpful to clarify the regulations on this point.

By the term "production area," EPA means the animal confinement areas, the manure storage areas (e.g. lagoon, shed, pile), the feed storage areas (e.g., silo, silage bunker), and the waste containment areas (e.g., berms, diversions). The land application areas include any land to which a CAFO's manure and wastewater is applied (e.g., crop fields, fields, pasture) that is under the control of the CAFO owner or operator, whether through ownership or a lease or contract. The land application areas do not include areas that are not under the CAFO owner's or operator's control. For example, where a nearby farm is owned and operated by someone other than the CAFO owner or operator and the nearby farm acquires the CAFO's manure or wastewater, by contract or otherwise, and applies those wastes to its own crop fields, those crop fields are not part of the CAFO.

The definition of an AFO under the existing regulations refers to a "lot or facility" that meets certain conditions, including that "[c]rops, vegetation[,] forage growth, or post-harvest residues are not sustained in the normal growing season over any portion of the lot or facility." 40 CFR 122.23(b)(1). In addition, the regulations define "discharge of a pollutant" as the addition of any pollutant to waters of the United States from any point source. 40 CFR 122.2. EPA interprets the current regulations to include discharges of CAFO-generated manure and wastewaters from improper land application to areas under the control of the CAFO as discharges from the CAFO itself. Otherwise, a CAFO could simply move its wastes outside the area of confinement, and over apply or otherwise improperly apply those wastes, which would render the CWA prohibition on unpermitted discharges of pollutants from CAFOs meaningless. Moreover, the pipes and other manure-spreading equipment that convey CAFO manure and wastewaters to land application areas under the control of the CAFO are an integral part of the CAFO. Under the existing regulations,

this equipment should be considered part of the CAFO, and discharges from this equipment that reach the waters of the United States as a result of improper land application should be considered discharges from the CAFO for this reason as well. In recent litigation brought by citizens against a dairy farm, a federal court reached a similar conclusion. See *CARE v. Sid Koopman Dairy, et al.*, 54 F. Supp. 2d 976 (E.D. Wash., 1999).

One of the goals of revising the existing CAFO regulations is to make the regulations clearer and more understandable to the regulated community and easier for permitting authorities to implement. EPA believes that amending the definition of an AFO (and, by extension, CAFO) to expressly include land application areas will help achieve this clarity and will enable permitting authorities to both more effectively implement the proposed effluent guidelines and to more effectively enforce the CWA's prohibition on discharging without a permit. It would be clear under this revision that the term "CAFO" means the entire facility, including land application fields and other areas under the CAFO's control to which it applies its manure and wastewater. By proposing to include land application areas in the definition of an AFO, and therefore, a CAFO, discharges from those areas would, by definition, be discharges from a point source—i.e., the CAFO. There would not need to be a separate showing of a discernible, confined, and discrete conveyance such as a ditch.

While the CWA includes CAFOs within the definition of a point source, it does not elaborate on what the term CAFO means. EPA has broad discretion to define the term CAFO. Land application areas are integral parts of many or most CAFO operations. Land application is typically the end point in the cycle of manure management at CAFOs. Significant discharges to the waters in the past have been attributed to the land application of CAFO-generated manure and wastewater. EPA does not believe that Congress could have intended to exclude the discharges from a CAFO's land application areas from coverage as discharges from the CAFO point source. Moreover, 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. Thus, it is reasonable for EPA to revise the regulations by

including land application areas in the definition of an AFO and CAFO.

While the proposal would include the land application areas as part of the AFO and CAFO, it would continue to count only those animals that are confined in the production area when determining whether a facility is a CAFO.

EPA is also considering today whether it is reasonable to interpret the agricultural storm water exemption as not applicable to any discharges from CAFOs. See section VII.D.2. If EPA were to adopt that interpretation, all discharges from a CAFO's land application areas would be subject to NPDES requirements, regardless of the rate or manner in which the manure has been applied to the land.

Please refer to section VII.D for a full discussion of land application, including EPA's proposal with regard to land application of CAFO manure by non-CAFOs.

EPA is requesting comment on this approach.

f. *What Types of Poultry Operations are CAFOs?* EPA is proposing to revise the CAFO regulations to include all poultry operations with the potential to discharge, and to establish the threshold for AFOs to be defined as CAFOs at 50,000 chickens and 27,500 turkeys. See proposed § 122.23(a)(3)(i)(H) and (I). The proposed revision would remove the limitation on the type of manure handling or watering system employed at laying hen and broiler operations and would, therefore, address all poultry operations equally. This approach would be consistent with EPA's objective of better addressing the issue of water quality impacts associated with both storage of manure at the production area and land application of manure while simultaneously simplifying the regulation. The following discussion focuses on the revisions to the threshold for chickens under each of the co-proposed regulatory alternatives.

The existing NPDES CAFO definition is written such that the regulations only apply to laying hen or broiler operations that have continuous overflow watering or liquid manure handling systems (i.e., "wet" systems). (40 CFR Part 122, Appendix B.) EPA has interpreted this language to include poultry operations in which dry litter is removed from pens and stacked in areas exposed to rainfall, or piles adjacent to a watercourse. These operations may be considered to have established a crude liquid manure system (see 1995 NPDES Permitting Guidance for CAFOs). The existing CAFO regulations also specify different thresholds for determining which AFOs

are CAFOs depending on which of these two types of systems the facility uses (e.g., 100,000 laying hens or broilers if the facility has continuous overflow watering; 30,000 laying hens or broilers if the facility has a liquid manure system). When the NPDES CAFO regulations were promulgated, EPA selected these thresholds because the Agency believed that most commercial operations used wet systems (38 FR 18001, 1973).

In the 25 years since the CAFO regulations were promulgated, the poultry industry has changed many of its production practices. Many changes to the layer production process have been instituted to keep manure as dry as possible. Consequently, the existing effluent guidelines do not apply to many broiler and laying hen operations, despite the fact that chicken production poses risks to surface water and ground water quality from improper storage of dry manure, and improper land application. It is EPA's understanding that continuous overflow watering has been largely discontinued in lieu of more efficient watering methods (i.e., on demand watering), and that liquid manure handling systems represent perhaps 15 percent of layer operations overall, although in the South approximately 40 percent of operations still have wet manure systems.

Despite the CAFO regulations, nutrients from large poultry operations continue to contaminate surface water and ground water due to 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). Many poultry operations are located on smaller parcels of land in comparison to other livestock sectors, oftentimes owning no significant cropland or pasture, placing increased importance on the proper management of the potentially large amounts of manure that they generate. EPA also believes that all types of livestock operations should be treated equitably under the revised regulation.

As documented in the Environmental Impact Assessment, available in the rulemaking Record, poultry production in concentrated areas such as in the Southeast, the Delmarva Peninsula in the mid-Atlantic, and in key Midwestern States has been shown to cause serious water quality impairments. For example, the Chesapeake Bay watershed's most serious water quality problem is caused by the overabundance of nutrients (e.g.

nitrogen and phosphorus). EPA's Chesapeake Bay Program Office estimates that poultry manure is the largest source of excess nitrogen and phosphorus reaching the Chesapeake Bay from the lower Eastern Shore of Maryland and Virginia, sending more than four times as much nitrogen into the Bay as leaky septic tanks and runoff from developed areas, and more than three times as much phosphorus as sewage treatment plants. These discharges of nutrients result from an over-abundance of manure relative to land available for application, as well as the management practices required to deal with the excess manure. The State of Maryland has identified instances where piles of chicken litter have been stored near ditches and creeks that feed tributaries of the Bay. Soil data also suggest that in some Maryland counties with poultry production the soils already contain 90 percent or more of the phosphorus needed by crops. The State of Maryland has surveyed the Pocomoke, Transquaking, and Manokin river systems and has concluded that 70-87 percent of all nutrients reaching those waters came from farms (though not all from CAFOs). Based on EPA data, phosphorus concentrations in the Pocomoke Sound have increased more than 25 percent since 1985, suffocating sea grasses that serve as vital habitat for fish and crabs. In 1997, poultry operations were found to be a contributing cause of *Pfiesteria* outbreaks in the Pocomoke River and Kings Creek (both in Maryland) and in the Chesapeake Bay, in which tens of thousands of fish were killed. Other examples of impacts from poultry manure are discussed in section V of today's proposal.

Dry manure handling is the predominant practice in the broiler and other meat type chicken industries. Birds are housed on dirt or concrete floors that have been covered with a bedding material such as wood shavings. Manure becomes mixed with this bedding to form a litter, which is removed from the house in two ways. After each flock of birds is removed from the house a portion of litter, referred to as cake, is removed. Cake is litter that has become clumped, usually below the watering system, although it can also be formed by a concentration of manure. In addition, the operator also removes all of the litter from the house periodically. The frequency of the "whole house" clean-out varies but commonly occurs once each year, unless a breach of biosecurity is suspected.

Broiler operations generally house between five and six flocks of birds each

year, which means there are between five or six "cake-outs" each year. Roasters have fewer flocks, and small fryers have more flocks, but the volume of "cake-out" removed in a year is comparable. "Cake-outs" will sometimes occur during periods when it is not possible to land apply the litter (e.g. in the middle of the growing season or during the winter when field conditions may not be conducive to land application). Consequently, it is usually necessary to store the dry litter after removal until it can be land applied.

Depending on the time of year it occurs, "whole house" clean-out may also require the operator to store the dry manure until it can be land applied. If the manure is stored in open stockpiles over long periods of time, usually greater than a few weeks, runoff from the stockpile may contribute pollutants to surface water and/or ground water that is hydrologically connected to surface water.

The majority of egg laying operations use dry manure handling, although there are operations with liquid manure handling systems. Laying hens are kept in cages and manure drops below the cages in both dry and liquid manure handling systems. Most of the dry manure operations are constructed as high rise houses where the birds are kept on the second floor and the manure drops to the first floor, which is sometimes referred to as the pit. Ventilation flows through the house from the roof down over the birds and into the pit over the manure before it is forced out through the sides of the house. The ventilation dries the manure as it piles up into cones. Manure can usually be stored in high rise houses for up to a year before requiring removal.

Problems can occur with dry manure storage in a high rise house when drinking water systems are not properly designed or maintained. For example, improper design or maintenance of the water system can result in excess water spilling into the pit below, which raises the moisture content of the manure, resulting in the potential for spills and releases of manure from the building.

Concerns with inadequate storage or improper design and maintenance contribute to concerns over dry manure systems for laying hens. As with broiler operations, open stockpiles of litter stored over long periods of time (e.g., greater than a few weeks) may contribute to pollutant discharge from contaminated runoff and leachate leaving the stockpile. Laying hens operations may also use a liquid manure handling system. The system is similar to the dry manure system except that

the manure drops below the cages into a channel or shallow pit and water is used to flush this manure to a lagoon.

The existing regulation already applies to laying hen and broiler operations with 100,000 birds when a continuous flow watering system is used, and to 30,000 birds when a liquid manure handling system is used. In revising the threshold for poultry operations, EPA evaluated several methods for equating poultry to the existing definition of an animal unit. EPA considered laying hens, pullets, broilers, and roasters separately to reflect the differences in size, age, production, feeding practices, housing, waste management, manure generation, and nutrient content of the manure. Manure generation and pollutant parameters considered include: nitrogen, phosphorus, BOD₅, volatile solids, and COD. Analysis of these parameters consistently results in a threshold of 70,000 to 140,000 birds as being equivalent to 1,000 animal units. EPA also considered a liveweight basis for defining poultry. The liveweight definition of animal unit as used by USDA defines 455,000 broilers and pullets and 250,000 layers as being representative of 1,000 animal units. EPA data indicates that using a liveweight basis at 1,000 AU would exclude virtually all broiler operations from the regulation.

Consultations with industry indicated EPA should evaluate the different sizes (ages) and purposes (eggs versus meat) of chickens separately. However, when evaluating broilers, roasters, and other meat-type chickens, EPA concluded that a given number of birds capacity represented the same net annual production of litter and nutrients. For example, a farm producing primarily broilers would raise birds for 6–8 weeks with a final weight of 3 to 5 pounds, a farm producing roasters would raise birds for 9–11 weeks with a final weight of 6 to 8 pounds, whereas a farm producing game hens may only keep birds for 4–6 weeks and at a final weight of less than 2 pounds. The housing, production practices, waste management, and manure nutrients and process wastes generated in each case is essentially the same. Layers are typically fed less than broilers of equivalent size, and are generally maintained as a smaller chicken. However, a laying hen is likely to be kept for a year of egg production. The layer is then sold or molted for several weeks, followed by a second period of egg production. Pullets are housed until laying age of approximately 18 to 22 weeks. In all cases manure nutrients and litter generated results in a threshold of

80,000 to 130,000 birds as being the equivalent of 1,000 animal units.

Today's proposed NPDES and effluent guidelines requirements for poultry eliminate the distinction between how manure is handled and the type of watering system that is used. EPA is proposing this change because it believes there is a need to control poultry operations regardless of the manure handling or watering system. EPA believes that improper storage as well as land application rates which exceed agricultural use have contributed to water quality problems, especially in areas with large concentrations of poultry production. Inclusion of poultry operations in the proposed NPDES regulation is intended to be consistent with the proposed effluent guidelines regulation, discussed in section VIII of today's preamble. EPA is proposing that 100,000 laying hens or broilers be considered the equivalent of 1,000 animal units.

Consequently EPA proposes to establish the threshold under the two-tier alternative structure that defines which operations are CAFOs at 500 animal units as equivalent to 50,000 birds. Facilities that are subject to designation are those with fewer than 50,000 birds. This threshold would address approximately 10 percent of all chicken AFOs nationally and more than 70 percent of all manure generated by chickens. On a sector specific basis, this threshold would address approximately 28 percent of all broiler operations (including all meat-type chickens) while addressing more than 70 percent of manure generated by broiler operations. For layers (including pullets) the threshold would address less than 5 percent of layer operations while addressing nearly 80 percent of manure generated by layer operations. EPA believes this threshold is consistent with the threshold established for the other livestock sectors.

Under this two-tier structure, today's proposed changes exclude poultry operations with liquid manure handling systems if they have between 30,000 and 49,999 birds. EPA estimates this to be few if any operations nationally and believes these are relatively small operations. EPA does not believe these few operations pose a significant threat to water quality even in aggregation. EPA also notes that the trend in laying hen operations (where liquid systems may occur) has been to build new operations to house large numbers of animals (e.g., usually in excess of 100,000 birds per house), which frequently employ dry manure handling systems. Given the limited number of existing operations with liquid manure

handling systems and the continuing trend toward larger operations, EPA believes the proposed uniform threshold of 50,000 birds is appropriate.

Under the proposed alternative three-tier structure, any operation with more than 100,000 chickens is automatically defined as a CAFO. This upper tier reflects 4 percent of all chicken operations. Additionally those poultry operations with 30,000 to 100,000 chickens are defined as CAFOs if they meet the unacceptable conditions presented in section VII.C. This middle tier would address an additional 10 percent of poultry facilities. By sector this middle tier would potentially cover an additional 45 percent of broiler manure and 22 percent layer manure. In aggregate this scenario would address 14 percent of chicken operations and 86 percent of manure. See VI.A.2 for the additional information regarding scope of the two proposed regulatory alternatives.

EPA acknowledges that this threshold pulls in a substantial number of chicken operations under the definition of a CAFO. Geographic regions with high density of poultry production have experienced water quality problems related to an overabundance of nutrients, to which the poultry industry has contributed. For example northwestern Arkansas and the Delmarva peninsula in the Mid-Atlantic tend to have smaller poultry farms as compared to other regions. The chicken and turkey sectors also have higher percentages of operations with insufficient or no land under the control of the AFO on which to apply manure. Thus EPA believes this threshold is appropriate to adequately control the potential for discharges from poultry CAFOs.

g. How Would Immature Animals in the Swine and Dairy Sectors be Counted? EPA is proposing to include immature swine and heifer operations under the CAFO definition. See proposed § 122.23(a)(3)(i)(C) and (E). In the proposed two-tier structure, EPA would establish the 500 AU threshold equivalent for defining which operations are CAFOs as operations with 5000 or more swine weighing 55 pounds or less, and those with fewer than 5000 swine under 55 pounds are AFOs which may be designated as CAFOs. Immature dairy cows, or heifers, would be counted equivalent to beef cattle; that is, the 500 AU threshold equivalent for defining CAFOs would be operations with 500 or more heifers, and those with fewer than 500 could be designated as CAFOs.

In the proposed three-tier structure, the 300 AU and 1,000 AU equivalents,

respectively for each animal type would be: 3,000 head and 10,000 head for immature swine; and 300 head and 1,000 head for heifers.

Only swine over 55 pounds and mature dairy cows are specifically included in the current definition (although manure and wastewater generated by immature animals confined at the same operation with mature animals are subject to the existing requirements). Immature animals were not a concern in the past because they were generally 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 livestock industries have become increasingly specialized with the emergence of increasing numbers of large stand-alone nurseries. Further, manure from immature animals tends to have higher concentrations of pathogens and hormones and thus poses greater risks to the environment and human health.

Since the 1970s, the animal feeding industry has become more specialized, especially at larger operations. When the CAFO regulations were issued, it was typical to house swine from birth to slaughter together at the same operation known as a farrow to finish operation. Although more than half of swine production continues to occur at farrow-to-finish operations, today it is common for swine to be raised in phased production systems. As described in section VI, specialized operations that only house sows and piglets until weaned represent the first phase, called farrowing. The weaned piglets are transferred to a nursery, either at a separate building or at a location remote from the farrowing operation for biosecurity concerns. The nursery houses the piglets until they reach about 55 to 60 pounds, at which time they are transferred to another site, the grow-finish facility.

The proposed thresholds for swine are established on the basis of the average phosphorus excreted from immature swine in comparison to the average phosphorus excreted from swine over 55 pounds. A similar threshold would be obtained when evaluating live-weight manure generation, nitrogen, COD and volatile solids (VS). See the Technical Development Document for more details.

Dairies often remove immature heifers to a separate location until they reach maturity. These off-site operations may confine the heifers in a manner that is very similar to a beef feedlot or the heifers may be placed on pasture. The existing CAFO definition does not

address operations that only confine immature heifers. EPA acknowledges that dairies may keep heifers and calves and a few bulls on site. EPA data indicates some of these animals are in confinement, some are pastured, and some moved back and forth between confinement, open lots, and pasture. The current CAFO definition considers only the mature milking cows. This has raised some concerns that many dairies with significant numbers of immature animals could be excluded from the regulatory definition even though they may generate as much manure as a dairy with a milking herd large enough to be a CAFO. The proportion of immature animals maintained at dairies can vary significantly with a high being a one to one ratio. Industry-wide there are 0.6 immature animals for every milking cow.

EPA considered options for dairies that would take into account all animals maintained in confinement, including calves, bulls and heifers when determining whether a dairy is a CAFO or not. EPA examined two approaches for this option, one that would count all animals equally and another based on the proportion of heifers, calves, and bulls likely to be present at the dairy. EPA is not proposing to adopt either of these options.

The milking herd is usually a constant at a dairy, but the proportion of immature animals can vary substantially among dairies and even at a given dairy over time. Some operations maintain their immature animals on-site, but keep them on pasture most of the time. Some operations keep immature animals on-site, and maintain them in confinement all or most of the time. Some operations may also have one or two bulls on-site, which can also be kept either in confinement or on pasture, while many keep none on-site. Some operations do not keep their immature animals on-site at all, instead they place them offsite, usually in a stand-alone heifer operation. Because of the variety of practices at dairies, it becomes very difficult to estimate how many operations have immature animals on-site in confinement. EPA believes that basing the applicability on the numbers of immature animals and bulls would make implementing the regulation more difficult for the permit authority and the CAFO operator. However, EPA requests comment on this as a possible approach.

EPA also requests comments on using only mature milking cows as the means for determining applicability of the size thresholds. Under the two-tier structure, EPA's proposed requirements for dairies would apply to 3 percent of the dairies nationally and will control 37 percent of

the CAFO manure generated by all dairies nationally. This is proportionally lower than other livestock sectors, largely due to the dominance of very small farms in the dairy industry. There are similar trends in the dairy industry as in the other livestock sectors, indicating that the number of large operations is increasing while the number of small farms continues to decline. Under the three-tier structure, EPA's proposed requirements would apply to 6 percent of the dairies nationally, and will control 43 percent of all manure generated at dairy CAFOs annually. See Section VI.A.1.

Inclusion in the proposed NPDES definition of immature swine and heifers is intended to be consistent with the proposed effluent guidelines regulation, described in section VIII of today's preamble.

P. What Other Animal Sectors Does Today's Proposal Affect? EPA is proposing to lower the threshold for defining which AFOs are CAFOs to the equivalent of 500 AU in the horse, sheep, lamb and duck sectors under the two-tier structure. See proposed § 122.23(a)(3)(i). This action is being taken to be consistent with the NPDES proposed revisions for beef, dairy, swine and poultry. Under the three-tier structure, the existing thresholds would remain as they are under the existing regulation.

The animal types covered by the NPDES program are defined in the current regulation (Part 122 Appendix B). The beef, dairy, swine, poultry and veal sectors are being addressed by both today's effluent guidelines proposal and today's NPDES proposal. However, today's proposal would not revise the effluent guidelines for any animal sector other than beef, dairy, swine, poultry and veal. Therefore, under today's proposal, any facility in the horse, sheep, lamb and duck sectors with 500 to 1,000 AU that is defined as a CAFO, and any facility in any sector below 500 AU that is designated as a CAFO, will not be subject to the effluent guidelines, but will have NPDES permits developed on a best professional judgment (BPJ) basis.

Table 7-6 identifies those meeting the proposed 500 AU threshold in the two-tier structure. Table 7-7 identifies the numbers of animals meeting the 300 AU, 300 AU to 1,000 AU, and the 1,000 AU thresholds in the three-tier structure.

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 permit

authority designates it as a CAFO on the basis that it is a significant contributor of pollution to waters of the U.S. Refer to VII.C.4 in today's proposal for a discussion of designation for AFOs.

The economic analysis for the NPDES rule does not cover animal types other than beef, dairy, swine and poultry. EPA chose to analyze those animal types that produce the greatest amount of manure and wastewater in the aggregate while in confinement. EPA believes that most horses, sheep, and lambs operations are not confined and therefore will not be subject to permitting, thus, the Agency expects the impacts in these sectors to be minimal. However, most duck operations probably are confined. EPA requests comments on the effect of this proposal on the horse, sheep, lamb and duck sectors.

i. How Does EPA Propose to Control Manure at Operations that Cease to be CAFOs? EPA is proposing to require operators of permitted CAFOs that cease operations to retain NPDES permits until the facilities are properly closed, i.e., no longer have the potential to discharge. See § 122.23(i)(3). Similarly, today's proposal would clarify that, if a facility ceases to be an active CAFO (e.g., it decreases the number of animals below the threshold that defined it as a CAFO, or ceases to operate), the CAFO must remain permitted until all wastes at the facility that were generated while the facility was a CAFO no longer have the potential to reach waters of the United States.

These requirements mean that if a permit is about to expire and the manure storage facility has not yet been properly closed, the facility would be required to apply for a permit renewal because the facility has the potential to discharge to waters of the U.S. until it is properly closed. Proper facility closure includes removal of water from lagoons and stockpiles, and proper disposal of wastes, which may include land application of manure and wastewater in accordance with NPDES permit requirements, to prevent or minimize discharge of pollutants to receiving waters.

The existing regulations do not explicitly address whether a permit should be allowed to expire when an owner or operator ceases operations. However, the public has expressed concerns about facilities that go out of business leaving behind lagoons, stockpiles and other contaminants unattended and unmanaged. Moreover, there are a number of documented instances of spills and breaches at CAFOs that have ceased operations, leaving behind environmental problems that became a public burden to resolve

(see, for example, report of the North Carolina DENR, 1999).

EPA considered five options for NPDES permit requirements to ensure that CAFO operators provide assurances for proper closure of their facilities (especially manure management systems such as lagoons) in the event of financial failure or other business curtailment. EPA examined the costs to the industry and the complexity of administering such a program for all options. The analyses of these options are detailed in the EPA NPDES CAFO Rulemaking Support Document, September 26, 2000.

Closure Option 1 would require a closure plan. The CAFO operator would be required to have a written closure plan detailing how the facility plans to dispose of animal waste from manure management facilities. The plan would be submitted with the permit application and be approved with the permit application. The plan would identify the steps necessary to perform final closure of the facility, including at least:

- A description of how each major component of the manure management facility (e.g., lagoons, settlement basins, storage sheds) will be closed;
- An estimate of the maximum inventory of animal waste ever on-site, accompanied with a description of how the waste will be removed, transported, land applied or otherwise disposed; and
- A closure schedule for each component of the facility along with a description of other activities necessary during closure (e.g., control run-off/run-on, ground water monitoring if necessary).

EPA also investigated several options that would provide financial assurances in the event the CAFO went out of business, such as contribution to a sinking fund, commercial insurance, surety bond, and other common commercial mechanisms. Under Closure Option 2, permittees would have to contribute to a sinking fund to cover closure costs of facilities which abandon their manure management systems. The contribution could be on a per-head basis, and could be levied on the permitting cycle (every five years), or annually. The sinking fund would be available to cleanup any abandoned facility (including those which are not permitted). Data on lagoon closures in North Carolina (Harrison, 1999) indicate that the average cost of lagoon closure for which data are available is approximately \$42,000. Assuming a levy of \$0.10 per animal, the sinking fund would cover the cost of approximately 50 abandonments nationally per year, not accounting for

any administrative costs associated with operating the funding program.

Closure Option 3 would require permittees to provide financial assurance by one of several generally accepted mechanisms. Financial assurance options could include the following common mechanisms: a) Commercial insurance; (b) Financial test; (c) Guarantee; (d) Certificate of Deposit or designated savings account; (e) Letter of credit; or (f) Surety bond. The actual cost to the permittee would depend upon which financial assurance option was available and implemented. The financial test would likely be the least expensive for some operations, entailing documentation that the net worth of the CAFO operator is sufficient such that it is unlikely that the facility will be abandoned for financial reasons. The guarantee would also be inexpensive, consisting of a legal guarantee from a parent corporation or other party (integrator) that has sufficient levels of net worth. The surety bond would likely be the most expensive, typically requiring an annual premium of 0.5 to 3.0 percent of the value of the bond; this mechanism would likely be a last resort for facilities that could not meet the requirement of the other mechanisms.

Option 4 is a combination of Options 2 and 3. Permittees would have to provide financial assurance by one of several generally accepted mechanisms, or by participating in a sinking fund. CAFO operators could meet closure requirements through the most economical means available for their operation.

Option 5, the preferred option in today's proposal, simply requires CAFOs to maintain NPDES permit coverage until proper closure. Under this option, facilities would be required to maintain their NPDES permits, even upon curtailment of the animal feeding operation, for as long as the facility has the potential to discharge. The costs for this option would be those costs associated with maintaining a permit.

Today, EPA is proposing to require NPDES permits to include a condition that imposes a duty to reapply for a permit unless an owner or operator has closed the facility such that there is no potential for discharges. The NPDES program offers legal and financial sanctions that are sufficient, in EPA's view, to ensure that operators comply with this requirement. EPA believes that this option would accomplish its objectives and would be generally easy and effective to implement. However, there are concerns that it would not be effective for abandoned facilities because, unlike some of the other

options, no financial assurance mechanism would be in place. EPA is requesting comment on the practical means of addressing the problem of unmanaged waste from closed or abandoned CAFOs, and what authorities EPA could use under the CWA or other statutes to address this problem.

See Section VII.E.5.c of today's proposal, which further discusses the requirement for permit authorities to include facility closure in NPDES permit special conditions.

While EPA is today proposing to only require ongoing permit coverage of the former CAFO, permit authorities are encouraged to consider including other conditions such as those discussed above.

j. *Applicability of the Regulations to Operations That Have a Direct Hydrologic Connection to Ground Water.* Because of its relevance to today's proposal, EPA is restating that the Agency interprets the Clean Water Act to apply to discharges of pollutants from a point source via ground water that has a direct hydrologic connection to surface water. See proposed § 122.23(e). Specifically, the Agency is proposing that all CAFOs, including those that discharge or have the potential to discharge CAFO wastes to navigable waters via ground water with a direct hydrologic connection must apply for an NPDES permit. In addition, the proposed effluent guidelines will require some CAFOs to achieve zero discharge from their production areas including via ground water which has a direct hydrologic connection to surface water. Further, for CAFOs not subject to such an effluent guideline, permit writers would in some circumstances be required to establish special conditions to address such discharges. In all cases, a permittee would have the opportunity to provide a hydrologist's report to rebut the presumption that there is likely to be a discharge from the production area to surface waters via ground water with a direct hydrologic connection.

For CAFOs that would be subject to an effluent guideline that includes requirements for zero discharge from the production area to surface water via ground water (all existing and new beef and dairy operations, and new swine and poultry operations, see proposed § 412.33(a), 412.35(a), and 412.45(a)), the proposed regulations would presume that there is a direct hydrologic connection to surface water. The permittee would be required to either achieve zero discharge from the production area via ground water and perform the required ground water monitoring or provide a hydrologist's statement that there is no direct

connection of ground water to surface water at the facility. See 40 CFR 412.33(a)(3), 412.35(a)(3), and 412.45(a)(3).

For CAFOs that would be subject to the proposed effluent guideline at 412.43 (existing swine, poultry and veal facilities) which does not include ground water requirements, if the permit writer determines that the facility is in an area with topographical characteristics that indicate the presence of ground water that is likely to have a direct hydrologic connection to surface water and if the permit writer determines that pollutants may be discharged at a level which may cause or contribute to an excursion above any State water quality standard, the permit writer would be required to include special conditions to address potential discharges via ground water. EPA is proposing that the permittee must either comply with those conditions or provide a hydrologist's statement that the facility does not have a direct hydrologic connection to surface water. 40 CFR 122.23(j)(6) and (k)(5).

If a CAFO is not subject to the Part 412 Subparts C or D effluent guideline (e.g., because it has been designated as a CAFO and is below the threshold for applicability of those subparts; or is a CAFO in a sector other than beef, dairy, swine, poultry or veal and thus is subject to subparts A or B), then the permit writer would be required to decide on a case-by-case basis whether effluent limitations (technology-based and water quality-based, as necessary) should be established to address potential discharges to surface water via hydrologically connected ground water. Again, the permittee could avoid or satisfy such requirements by providing a hydrologist's statement that there is no direct hydrologic connection 40 CFR 122.23(k)(5).

Legal Basis. The Clean Water Act does not directly answer the question of whether a discharge to surface waters via hydrologically connected ground water is unlawful. However, given the broad construction of the terms of the CWA by the federal courts and the goals and purposes of the Act, the Agency believes that while Congress has not spoken directly to the issue, the Act is best interpreted to cover such discharges. The statutory terms certainly do not prohibit the Agency's determination that a discharge to surface waters via hydrologically-connected ground waters can be governed by the Act, while the terms do clearly indicate Congress' broad concern for the integrity of the Nation's waters. Section 301(a) of the CWA provides that "the discharge of any pollutant [from a

point source] by any person shall be unlawful" without an NPDES permit. The term "discharge of a pollutant" is defined as "any addition of a pollutant to navigable waters from any point source." 33 U.S.C. § 1362(12). In turn, "navigable waters" are defined as "the waters of the United States, including the territorial seas." 33 U.S.C. § 1362(7). None of these terms specifically includes or excludes regulation of a discharge to surface waters via hydrologically connected ground waters. Thus, EPA interprets the relevant terms and definitions in the Clean Water Act to subject the addition of manure to nearby surface waters from a CAFO via hydrologically connected ground waters to regulation.

Some sections of the CWA do directly apply to ground water. Section 102 of the CWA, for example, requires the Administrator to "develop comprehensive programs for preventing, reducing, or eliminating the pollution of the navigable waters and ground waters and improving the sanitary conditions of surface and underground waters." 33 U.S.C. § 1252. Such references, however, are not significant to the analysis of whether Congress has spoken directly on the issue of regulating discharges via ground water which directly affect surface waters. Specific references to ground water in other sections of the Act may shed light on the question of whether Congress intended the NPDES program to regulate ground water quality. That question, however, is not the same question as whether Congress intended to protect surface water from discharges which occur via ground water. Thus, the language of the CWA is ambiguous with respect to the specific question, but does not bar such regulation. Moreover, the Supreme Court has recognized Congress' intent to protect aquatic ecosystems through the broad federal authority to control pollution embodied in the Federal Water Pollution Control Act Amendments of 1972. Section 101 of the Act clearly states the purpose of the Act "to restore and maintain the chemical, physical, and biological integrity of the Nations' waters." 33 U.S.C. § 1251(a)(1). The Supreme Court found that "[t]his objective incorporated a broad, systemic view of the goal of maintaining and improving water quality: as the House Report on the legislation put it, "the word "integrity" * * * refers to a condition in which the natural structure and function of aquatic ecosystems [are] maintained." *United States v. Riverside Bayview Homes*, 474 U.S. 121, 132 (1985). An interpretation of the CWA which excludes regulation

of point source discharges to the waters of the U.S. which occur via ground water would, therefore, be inconsistent with the overall Congressional goals expressed in the statute.

Federal courts have construed the terms of the CWA broadly (*Sierra Club v. Colorado Refining Co.*, 838 F. Supp. 1428, 1431 (D.Colo. 1993) (citing *Quivera Mining Co. v. EPA*, 765 F.2d 126, 129 (10th Cir. 1985)), but have found the language ambiguous with regard to ground water and generally examine the legislative history of the Act. See e.g., *Exxon v. Train*, 554 F.2d 1310, 1326–1329 (reviewing legislative history). However, a review of the legislative history also is inconclusive. Thus, courts addressing the issue have reached conflicting conclusions.

Since the language of the CWA itself does not directly address the issue of discharges to ground water which affect surface water, it is proper to examine the statute's legislative history. Faced with the problem of defining the bounds of its regulatory authority, "an agency may appropriately look to the legislative history and underlying policies of its statutory grants of authority." *Riverside Bayview Homes*, 474 U.S. at 132. However, the legislative history also does not address this specific issue. See *Colorado Refining Co.*, 838 F. Supp. at 1434 n.4 (noting legislative history inconclusive).

In the House, Representative Les Aspin proposed an amendment with explicit ground water protections by adding to the definition of "discharge of a pollutant" the phrase "any pollutant to ground waters from any point source." *Legislative History of the Water Pollution Control Act Amendments of 1972*, 93d Cong., 1st. Sess. at 589 (1972) (hereinafter "Legislative History"). While the Aspin amendment was defeated, that rejection does not necessarily signal an explicit decision by Congress to exclude even ground water per se from the scope of the permit program. Commentators have suggested that provisions in the amendment which would have deleted exemptions for oil and gas well injections were the more likely cause of the amendment's defeat. Mary Christina Wood, *Regulating Discharges into Groundwater: The Crucial Link in Pollution Control Under the Clean Water Act*, 12 Harv. Envtl. L. Rev. 569, 614 (1988); see also Legislative History at 590–597 (during debate on the amendment, members in support and members in opposition focused on the repeal of the exemption for oil and gas injection wells).

At the least, there is no evidence that in rejecting the explicit extension of the

NPDES program to all ground water Congress intended to create a ground water loophole through which the discharges of pollutants could flow, unregulated, to surface water. Instead, Congress expressed an understanding of the hydrologic cycle and an intent to place liability on those responsible for discharges which entered the "navigable waters." The Senate Report stated that "[w]ater moves in hydrologic cycles and it is essential that discharge of pollutants be controlled at the source." Legislative History at 1495. The Agency has determined that discharges via hydrologically connected ground water impact surface waters and, therefore, should be controlled at the source.

Most of the courts which have addressed the question of whether the CWA subjects discharges to surface waters via hydrologically connected ground waters to regulation have found the statute ambiguous on this specific question. They have then looked to the legislative history for guidance. *McClellan Ecological Seepage Situation v. Weinberger*, 707 F. Supp. 1182, 1194 (E.D. Cal. 1988), vacated (on other grounds), 47 F.3d 325 (9th Cir. 1995), cert. denied, 116 S.Ct. 51 (1995); *Kelley v. United States*, 618 F.Supp. 1103, 1105–06 (D.C.Mich. 1985). Even those courts which have not found jurisdiction have acknowledged that it is a close question. *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, 24 F.3d 962, 966 (7th Cir. 1994), cert. denied, 513 U.S. 930 (1994). As one court noted, "the inclusion of groundwater with a hydrological connection to surface waters has troubled courts and generated a torrent of conflicting commentary." *Potter v. ASARCO*, Civ. No. S:56CV555, slip op. at 19 (D.Neb. Mar. 3, 1998). The fact that courts have reached differing conclusions when examining whether the CWA regulates such discharges is itself evidence that the statute is ambiguous.

EPA does not argue that the CWA directly regulates ground water quality. In the Agency's view, however, the CWA does regulate discharges to surface water which occur via ground water because of a direct hydrologic connection between the contaminated ground water and nearby surface water. EPA repeatedly has taken the position that the CWA can regulate discharges to surface water via ground water that is hydrologically connected to surface waters.

For example, in issuing the general NPDES permit for concentrated animal feeding operations ("CAFOs") in Idaho, EPA stated:

"EPA agrees that groundwater contamination is a concern around CAFO facilities. However, the Clean Water Act does not give EPA the authority to regulate groundwater quality through NPDES permits.

"The only situation in which groundwater may be affected by the NPDES program is when a discharge of pollutants to surface waters can be proven to be via groundwater." 62 FR 20177, 20178 (April 25, 1997). In response to a comment that the CAFO general permit should not cover ground water, the Agency stated:

"EPA agrees that the Clean Water Act does not give EPA the authority to regulate groundwater quality through NPDES permits. However, the permit requirements * * * are not intended to regulate groundwater. Rather, they are intended to protect surface waters which are contaminated via a groundwater (subsurface) connection." *Id.*

EPA has made consistent statements on at least five other occasions. In the Preamble to the final NPDES Permit Application Regulations for Storm Water Discharges, the Agency stated: "this rulemaking only addresses discharges to waters of the United States, consequently discharges to ground waters are not covered by this rulemaking (unless there is a hydrological connection between the ground water and a nearby surface water body.)" 55 FR 47990, 47997 (Nov. 16, 1990)(emphasis added). See also 60 FR 44489, 44493 (August 28, 1995) (in promulgating proposed draft CAFO permit, EPA stated: "[D]ischarges that enter surface waters indirectly through groundwater are prohibited"); EPA, "Guide Manual On NPDES Regulations For Concentrated Animal Feeding Operations" at 3 (December 1995) ("Many discharges of pollutants from a point source to surface water through groundwater (that constitutes a direct hydrologic connection) also may be a point source discharge to waters of the United States.").

In promulgating regulations authorizing the development of water quality standards under the CWA by Indian Tribes for their Reservations, EPA stated:

Notwithstanding the strong language in the legislative history of the Clean Water Act to the effect that the Act does not grant EPA authority to regulate pollution of ground waters, EPA and most courts addressing the issue have recognized that * * * the Act requires NPDES permits for discharges to groundwater where there is a direct hydrological connection between groundwater and surface waters. In

these situations, the affected ground waters are not considered "waters of the United States" but *discharges to them are regulated because such discharges are effectively discharges to the directly connected surface waters*. Amendments to the Water Quality Standards Regulations that Pertain to Standards on Indian Reservations, Final Rule, 56 FR 64876, 64892 (Dec. 12, 1991)(emphasis added).

While some courts have not been persuaded that the Agency's pronouncements on the regulation of discharges to surface water via ground water represent a consistent Agency position, others have found EPA's position to be clear. The *Hecla Mining* court noted that "The court in *Oconomowoc Lake* dismissed the EPA statements as a collateral reference to a problem. It appears to this court, however, that the preamble explains EPA's policy to require NPDES permits for discharges which may enter surface water via groundwater, as well as those that enter directly." *Washington Wilderness Coalition v. Hecla Mining Co.*, 870 F. Supp. 983, 990-91 (E.D. Wash. 1994), *dismissed on other grounds*, (lack of standing) per unpublished decision (E.D. Wash. May 7, 1997) (citing Preamble, NPDES Permit Regulations for Storm Water Discharges, 55 FR 47990, 47997 (Nov. 16, 1990)).

As a legal and factual matter, EPA has made a determination that, in general, collected or channeled pollutants conveyed to surface waters via ground water can constitute a discharge subject to the Clean Water Act. The determination of whether a particular discharge to surface waters via ground water which has a direct hydrologic connection is a discharge which is prohibited without an NPDES permit is a factual inquiry, like all point source determinations. The time and distance by which a point source discharge is connected to surface waters via hydrologically connected surface waters will be affected by many site specific factors, such as geology, flow, and slope. Therefore, EPA is not proposing to establish any specific criteria beyond confining the scope of the regulation to discharges to surface water via a "direct" hydrologic connection. Thus, EPA is proposing to make clear that a general hydrologic connection between all waters is not sufficient to subject the owner or operator of a point source to liability under the Clean Water Act. Instead, consistent with the case law, there must be information indicating that there is a "direct" hydrologic connection to the surface water at issue. *Hecla Mining*, 870 F.Supp. at 990 ("Plaintiffs must still demonstrate that

pollutants from a point source affect surface waters of the United States. It is not sufficient to allege groundwater pollution, and then to assert a general hydrological connection between all waters. Rather, pollutants must be traced from their source to surface waters, in order to come within the purview of the CWA.")

The reasonableness of the Agency's interpretation is supported by the fact that the majority of courts have determined that CWA jurisdiction may extend to surface water discharges via hydrologic connections.¹ As the court in

¹ See e.g., *Williams PipeLine Co. v. Bayer Corp.*, 964 F.Supp. 1300, 1319-20 (S.D.Iowa 1997) ("Because the CWA's goal is to protect the quality of surface waters, the NPDES permit system regulates any pollutants that enter such waters either directly or through groundwater."); *Washington Wilderness Coalition v. Hecla Mining Co.*, 870 F. Supp. 983, 989-90 (E.D. Wash. 1994), *dismissed on other grounds*, (lack of standing) per unpublished decision (E.D. Wash. May 7, 1997) (finding CWA jurisdiction where pollution discharged from manmade ponds via seeps into soil and ground water and, thereafter, surface waters; and holding that, although CWA does not regulate isolated ground water, CWA does regulate pollutants entering navigable waters via tributary ground waters); *Friends of the Coast Fork v. Co. of Lane, OR*, Civ. No. 95-6105-TC (D. OR. January 31, 1997) (reaching same conclusion as court in *Washington Wilderness Coalition v. Hecla Mining Co.*, and finding hydrologically-connected ground waters are covered by the CWA); *McClellan Ecological Seepage Situation*, 763 F. Supp. 431, 438 (E.D. Cal. 1989), *cacated (on other grounds)*, 47 F.3d 325 (9th Cir. 1995), *cert. denied*, 116 S.Ct. 51 (1995) (allowing plaintiff to attempt to prove at trial that pollutants discharged to ground water are subsequently discharged to surface water); and *McClellan Ecological Seepage Situation v. Weinberger*, 707 F. Supp. 1182, 1195-96 (E.D. Cal. 1988), *vacated (on other grounds)*, 47 F.3d 325 (9th Cir. 1995), *cert. denied*, 116 S.Ct.51 (1995) (although NPDES permit not required for discharges to isolated ground water, Congress' intent to protect surface water may require NPDES permits for discharges to ground water with direct hydrological connection to surface waters); *Friends of Sante Fe Co. v. LAC Minerals, Inc.*, 892 F. Supp. 1333, 1357-58 (D.N.M. 1995) (although CWA does not cover discharges to isolated, nontributary groundwater, *Quivira* and decisions within Tenth Circuit demonstrating expansive construction of CWA's jurisdictional reach foreclose arguments that CWA does not regulate discharges to hydrologically-connected groundwater); *Sierra club v. Colorado Refining Co.*, 838 F. Supp. at 1434 ("navigable waters" encompasses tributary groundwater and, therefore, allegations that defendant violated CWA by discharging pollutants into soils and groundwater, and that pollutants infiltrated creek via groundwater and seeps in creek bank, stated cause of action); and *Quivira Mining Co. v. United States EPA*, 765 F.2d 126, 130 (10th Cir. 1985), *cert. denied*, 474 U.S. 1055 (1986) (affirming EPA's determination that CWA permit required for discharges of pollutants into surface arroyos that, during storms, channeled rainwater both directly to streams and into underground aquifers that connected with such streams); *Martin v. Kansas Board of Regents*, 1991 U.S.Dist. LEXIS 2779 (D.Kan. 1991) ("Groundwater . . . that is naturally connected to surface waters constitute 'navigable waters' under the Act."); see also *Inland Steel Co. v. EPA*, 901 F.2d 1419, 1422-23 (7th Cir. 1990) ("the legal concept of navigable waters might include ground waters connected to surface

Potter v. ASARCO, Inc. declared, "in light of judicial precedent, Congress" remedial purpose, the absence of any specific legislative intent pertaining to hydrologically connected ground water and the informal pronouncements of EPA, any pollutants that enter navigable waters, whether directly or indirectly through a specific hydrological connection, are subject to regulation by the CWA." Slip op. at 26.

The decisions which did not find authority to regulate such discharges under the CWA may, for the most part, be distinguished. In *Village of Oconomowoc Lake v. Dayton Hudson Corp.*, the Seventh Circuit held that the CWA does not regulate ground water per se. 24 F.3d 962 (7th Cir. 1994), *cert. denied*, 513 U.S. 930 (1994). In *Oconomowoc*, however, the plaintiff only alluded to a "possibility" of a hydrologic connection. 24 F.3d at 965. In *Kelley v. United States*, the district court held that enforcement authority under the CWA did not include ground water contamination. 618 F. Supp. 1103 (W.D. Mich. 1985). The decision is not well-reasoned, as the *Kelley* court merely states—without further elaboration—that the opinion in *Exxon v. Train*, which specifically "expressed no opinion" on whether the CWA regulated hydrologically connected ground waters, and the legislative history "demonstrate that Congress did not intend the Clean Water Act to extend federal regulatory enforcement authority over groundwater contamination." *Kelley*, 618 F. Supp. at 1107 (emphasis added). In *Umatilla*, the court concluded that the NPDES program did not apply to even hydrologically connected ground water. 962 F.Supp. at 1318. The court reviewed the legislative history and existing precedent on the issue, but failed to distinguish between the regulation of ground water per se and the regulation of discharges into waters of the United States which happen to occur via ground water. Moreover, the court failed to give deference to the Agency's interpretation of the CWA. *Id.* at 1319 (finding that the Agency interpretations cited by the plaintiffs failed to articulate clear regulatory boundaries and were not sufficiently "comprehensive, definitive or formal" to deserve deference, but acknowledging that "neither the statute nor the legislative history absolutely prohibits an interpretation that the NPDES requirement applies to discharges of

waters—though whether it does or not is an unresolved question. * * * [A] well that ended in such connected ground waters might be within the scope of the [CWA]").

pollutants to hydrologically-connected groundwater"). Today's proposal should provide the type of formal Agency interpretation that court sought. Two other decisions have simply adopted the reasoning of the Umatilla court. *United States v. ConAgra, Inc.*, Case No. CV 96-0134-S-LMB (D. Idaho 1997); *Allegheny Environmental Action Coalition v. Westinghouse*, 1998 U.S. Dist. LEXIS 1838 (W.D.Pa. 1998).

The Agency has utilized its expertise in environmental science and policy to determine the proper scope of the CWA. The determination of whether the CWA regulates discharges to ground waters connected to surface waters, like the determination of wetlands jurisdiction, "ultimately involves an ecological judgment about the relationship between surface waters and ground waters, it should be left in the first instance to the discretion of the EPA and the Corps." *Town of Norfolk v. U.S. Army Corps of Engineers*, 968 F.2d 1438, 1451 (1st Cir. 1992) (citing *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. at 134). The Supreme Court, too, has acknowledged the difficulty of determining precisely where Clean Water Act jurisdiction lies and has held that an agency's scientific judgment can support a legal jurisdictional judgment. *United States v. Riverside Bayview Homes, Inc.*, 474 U.S. 121, 134 (1985) ("In view of the breadth of federal regulatory authority contemplated by the [Clean Water] Act itself and the inherent difficulties of defining precise bounds to regulable waters, the Corps' ecological judgment about the relationship between waters and their adjacent wetlands provides an adequate basis for a legal judgment that adjacent wetlands may be defined as waters under the Act.").

The Agency has made clear the rationale for its construction: "the Act requires NPDES permits for discharges to groundwater where there is a direct hydrological connection between groundwater and surface waters. In these situations, the affected ground waters are not considered 'waters of the United States' but *discharges to them are regulated because such discharges are effectively discharges to the directly connected surface waters.*"

Amendments to the Water Quality Standards Regulations that Pertain to Standards on Indian Reservations, Final Rule, 56 FR 64,876, 64892 (Dec. 12, 1991) (emphasis added). The Agency has taken this position because ground water and surface water are highly interdependent components of the hydrologic cycle. The hydrologic cycle refers to "the circulation of water among soil, ground water, surface water, and

the atmosphere." U.S. Environmental Protection Agency, "A Review of Methods for Assessing Nonpoint Source Contaminated Ground-Water Discharge to Surface Water" at 3 (April 1991). Thus, a hydrologic connection has been defined as "the interflow and exchange between surface impoundments and surface water through an underground corridor or groundwater." NPDES General Permit and Reporting Requirements for Discharges from Concentrated Animal Feeding Operations, EPA Region 6 Public Notice of Final Permitting Decision, 58 FR 7610, 7635-36 (Feb. 8, 1993). The determination of whether a discharge to ground water in a specific case constitutes an illegal discharge to waters of the U.S. if unpermitted is a fact specific one. The general jurisdictional determination by EPA that such discharges can be subject to regulation under the CWA is a determination that involves an ecological judgment about the relationship between surface waters and ground waters.

Finally, the Supreme Court has explicitly acknowledged that resolution of ambiguities in agency-administered statutes involves policymaking: "As Chevron itself illustrates the resolution of ambiguity in a statutory text is often more a question of policy than of law. * * * When Congress, through express delegation or the introduction of an interpretive gap in the statutory structure, has delegated policymaking to an administrative agency, the extent of judicial review of the agency's policy determinations is limited." *Pauly v. Bethenergy Mines, Inc.*, 116 S.Ct. 2524, 2534 (1991). Congress established a goal for the CWA "to restore and maintain the chemical, physical and biological integrity of the nation's waters and to eliminate the discharge of pollutants into the navigable waters." 33 U.S.C. § 1251(a)(1). Congress also established some parameters for reaching that goal, but left gaps in the statutory structure. One of those gaps is the issue of discharges of pollutants from point sources which harm navigable waters but which happen to occur via ground water. The Agency has chosen to fill that gap by construing the statute to regulate such discharges as point source discharges. Given the Agency's knowledge of the hydrologic cycle and aquatic ecosystems, the Agency has determined that when it is reasonably likely that such discharges will reach surface waters, the goals of the CWA can only be fulfilled if those discharges are regulated.

Determining Direct Hydrologic Connection. In recent rulemakings, EPA has used various lithologic settings to

describe areas of vulnerability to contamination of ground water. This information can serve as a guide for permit writers to make the initial determination whether or not it is necessary to establish special conditions in a CAFO permit to prevent the discharge of CAFO waste to surface water via ground water with a direct hydrologic connection to surface water.

During the rulemaking processes for the development of the Ground Water Rule and the Underground Injection Control Class V under the Safe Drinking Water Act, significant stakeholder and Federal Advisory Committee Act (FACA), input was used to define lithologic settings that are likely to indicate ground water areas sensitive to contamination. Areas likely to have such a connection are those that have ground water sensitive to contamination and that have a likely connection to surface water. The Ground Water Proposed Rule includes language that describes certain types of lithologic settings (karst, fractured bedrock, and gravel) as sensitive to contamination and, therefore, subject to requirements under the rule to mitigate threats to human health from microbial pathogens. [See National Primary Drinking Water Regulations: Ground Water Rule, 65 FR 30193 (2000) (to be codified at 40 CFR Parts 141 and 142) (proposed May 10, 2000). See also Underground Injection Control Regulations for Class V Injection Wells, Revision; Final Rule, 64 FR 68546 (Dec. 7, 1999) (to be codified at 40 CFR Parts 9, 144, 145, and 146). See also Executive Summary, NDWAC UIC/Source Water Program Integration Working Group Meeting (March 25-26, 1999). All are available in the rulemaking Record.]

Under the Class V rule, a facility must comply with the mandates of the regulation if the facility has a motor vehicle waste disposal well (a type of Class V well) that is in an area that has been determined to be sensitive. (See Technical Assistance Document (TAD) for Delineating "Other Sensitive Ground Water Areas", EPA #816-R-00-016—to be published.) States that are responsible for implementing the Class V Rule, or in the case of Direct Implementation Programs, the EPA Regional Office, are given flexibility to make determinations of ground water sensitivity within certain guidelines.

40 CFR 145.23(f)(12) provides items that States are expected to consider in developing their other sensitive ground water area plan, including:

- Geologic and hydrogeologic settings,
- Ground water flow and occurrence,

- Topographic and geographic features,
- Depth to ground water,
- *Significance as a drinking water source,
- *Prevailing land use practices, and
- *Any other existing information relating to the susceptibility of ground water to contamination from Class V injection wells.

*The last three factors are not relevant to this rulemaking but are specific to mandates under the Safe Drinking Water Act to protect current and future sources of drinking water.

Geologic and hydrogeologic settings considered sensitive under the Class V Rule include areas such as karst, fractured bedrock or other shallow/unconsolidated aquifers. The Class V Rule lists karst, fractured volcanics and unconsolidated sedimentary aquifers, such as glacial outwash deposits and eolian sands, as examples of aquifer types. Under the Class V Rule, EPA urges States to consider all aquifer types that, based on their inherent characteristics, are likely to be moderately to highly sensitive. Such aquifer types are those that potentially have high permeability, such as: all fractured aquifers; all porous media aquifers with a grain size of sand or larger, including not only unconsolidated aquifers, but sandstone as well; and karst aquifers.

For more information at the regional level, information can be found in the document "Regional Assessment of Aquifer Vulnerability and Sensitivity in the Conterminous United States" [EPA/600/2-91/043] for state maps showing aquifers and portions of aquifers whose transmissivity makes them sensitive/vulnerable. This document may be helpful in identifying areas where existing contaminants are most likely to spread laterally. State and federal geological surveys have numerous geological maps and technical reports that can be helpful in the identification of areas of sensitive aquifers. University geology and earth science departments and consulting company reports may also have helpful information.

Data sources to assist permit writers in making sensitivity determinations can be acquired through many sources as listed above and include federal, state, and local data. For example, USGS maps and databases such as the principal aquifers map, state maps, other programs where such assessments may have been completed, such as State Source Water Assessment Programs (SWAP), state Class V, or Ground Water Rule sensitivity determinations.

Another potential approach to defining areas of ground water

sensitivity would be to define a set of characteristics which a facility could determine whether it met by using a set of national, regional and/or local maps. For instance, overburden, that is, soil depth and type, along with depth to water table, hydrogeologic characteristics of the surficial aquifer, and proximity to surface water could be factors used to define sensitive areas for likely ground water/surface water connections. For example, while there is no consistent definition or agreement as to what could be considered "shallow," a depth to the water table less than, say, six feet with sandy soils or other permeable soil type might indicate ground water vulnerability. Data of this nature could be obtained from USDA's Natural Resource Conservation Service (NRCS) national soils maps, available from the NRCS web site (www.nhq.nrcs.usda.gov/land/index/soils.html) or from the EPA web site (www.epa.gov/ostwater/BASINS/metadata/statsgo.htm).

Once it is determined that the CAFO is in a ground water sensitive area, proximity to a surface water would indicate a potential for the CAFO to discharge to surface water via a direct hydrological connection with ground water. Proximity to surface water would be considered when there is a short distance from the boundary of the CAFO to the closest downstream surface water body. Again, information of this type could be obtained from USGS topographic maps or state maps.

USGS Hydrologic Landscape Regions. Another approach for determining whether CAFOs in a region are generally located in areas where surface water is likely to have hydrological connections with ground water is by using a set of maps under development by the U.S. Geological Survey (USGS). USGS is developing a national map of Hydrologic Landscape Regions that describe watersheds based on their physical characteristics, such as topography and lithology. These maps will, among other things, help to identify physical features in the landscape that are important to water quality such as areas across the country where the geohydrology is favorable for ground water interactions with surface water.

The regions in this map will be delineated based on hydrologic unit codes (HUCs) nationwide and do not provide information at local scales; however, the maps can provide supplemental information that describes physical features within watersheds where interactions between ground water and surface water are found. These areas are the most likely places

where ground water underlying CAFO's could be discharged to nearby surface water bodies. While EPA has not fully assessed how this tool might be used to determine a CAFO's potential to discharge an excerpt of the pre-print report is provided here for purposes of discussion. The report describing this tool is anticipated to be published in Spring 2001 (Wolock, Winter, and McMahon, in review).

The concept of hydrologic landscapes is based on the idea that a single, simple physical feature is the basic building block of all landscapes. This feature is termed a fundamental landscape unit and is defined as an upland adjacent to a lowland separated by an intervening steeper slope. Some examples of hydrologic landscapes are as follows:

- A landscape consisting of narrow lowlands and uplands separated by high and steep valley sides, characteristic of mountainous terrain;
- A landscape consisting of very wide lowlands separated from much narrower uplands by steep valley sides, characteristic of basin and range physiography and basins of interior drainage; or
- A landscape consisting of narrow lowlands separated from very broad uplands by valley sides of various slopes and heights, characteristic of plateaus and high plains.

The hydrologic system of a fundamental landscape unit consists of the movement of surface water, ground water, and atmospheric-water exchange. Surface water movement is controlled by land-surface slope and surficial permeability; ground-water flow is a function of gravitational gradients and the hydraulic characteristics of the geologic framework; and atmospheric-water exchange primarily is determined by climate (Winter, in review). The same physical and climate characteristics control the movement of water over the surface and through the subsurface regardless of the geographic location of the landscapes. For example, if a landscape has gentle slopes and low-permeability soils, then surface runoff will be slow and recharge to ground water will be limited. In contrast, if the soils are permeable in a region of gentle slopes, then surface runoff may be limited but ground-water recharge will be high.

The critical features used to describe hydrologic landscapes are land-surface form, geologic texture, and climate. Land-surface form can be used to quantify land-surface slopes and relief. Geologic texture provides estimates of surficial and deep subsurface permeability which control infiltration, the production of overland flow, and

ground-water flow rates. Climate characteristics can be used to approximate available water to surface and ground-water systems. The variables used to identify hydrologic settings were averaged within each of the 2,244 hydrologic cataloging units defined by the USGS. This degree of spatial averaging was coarse enough to smooth the underlying data but fine enough to separate regions from each other.

For example, two Hydrological Landscape Regions (HLR) that are likely to have characteristics of ground water and surface water interactions with direct relevance to this proposed rulemaking would be "HLR1" and "HLR9". HLR1 areas are characterized by variably wet plains having highly permeable surface and highly permeable subsurface. This landscape is 92 percent flat land, with 56 percent of the flat land in the lowlands and 37 percent in the uplands. Land surface and bedrock are highly permeable. Because of the flat sandy land surface, this geologic framework should result in little surface runoff, and recharge to both local and regional ground-water flow systems should be high. Therefore, ground water is likely to be the dominant component of the hydrologic system in this landscape. The water table is likely to be shallow in the lowlands, resulting in extensive wetlands in this part of the landscape.

Major water issues in this hydrologic setting probably would be related to contamination of ground water. In the uplands, the contamination could affect regional ground-water flow systems. In the lowlands, the thin unsaturated zone and the close interaction of ground water and surface water could result in contamination of surface water. Flooding probably would not be a problem in the uplands, but it could be a serious problem in the lowlands because of the flat landscape and shallow water table.

HLR9 areas are characterized by wet plateaus having poorly permeable surface and highly permeable subsurface. This landscape is 42 percent flat land, with 24 percent in lowlands and 17 percent in uplands. Land surface is poorly permeable and bedrock is highly permeable. Because of the flat poorly permeable land surface, this geologic framework should result in considerable surface runoff and limited recharge to ground water. However, the bedrock is largely karstic carbonate rock, which probably would result in a considerable amount of surface runoff entering the deep aquifer through sinkholes. This water could readily move through regional ground-water

flow systems. Surface runoff and recharge through sinkholes are likely to be the dominant component of the hydrologic system in this landscape. The water table is likely to be shallow in the lowlands, resulting in extensive wetlands in this part of the landscape. Major water issues in this hydrologic setting probably would be related to contamination of surface water from direct surface runoff, and extensive contamination of ground water (and ultimately surface water) because of the ease of movement through the bedrock. The capacity of these carbonate rocks to mediate contaminants is limited. Flooding could be a problem in the lowlands.

EPA is requesting comment on how a permit writer might identify CAFOs at risk of discharging to surface water via ground water. EPA is also requesting comment on its cost estimates for the permittee to have a hydrologist make such a determination. EPA estimates that for a typical CAFO, the full cost of determining whether ground water beneath the facility has a direct hydrologic connection to surface water would be approximately \$3,000. See Section X for more information on cost estimates.

Permit requirements for facilities with groundwater that has a direct hydrologic connection with surface water are discussed in Section VII.E.5.d below.

k. *What Regulatory Relief is Provided by Today's Proposed Rulemaking? Two-tier vs. Three-tier Structure.* Each of EPA's proposals effect small livestock and poultry businesses in different ways, posing important trade-offs when selecting ways to mitigate economic impacts. First, by proposing to establish a two-tier structure with a 500 AU threshold, EPA is proposing not to automatically impose the effluent guidelines requirements on operations with 300 to 500 AU. By eliminating this size category, EPA estimates that about 10,000 smaller AFOs are relieved from being defined as CAFOs, and instead would only be subject to permitting if designated by the permit authority due to being a significant contributor of pollutants.

A three-tier structure, by contrast, only automatically defines all operations over 1,000 AU as CAFOs, instead of 500 AU. However, while all of the 26,000 AFOs between 300 and 1,000 AU wouldn't be required to apply for an NPDES permit, all those operations would be required to either apply for a permit or to certify to the permit authority that they do not meet any of the conditions for being a CAFO. EPA estimates that approximately 19,000 of these operations would have

to change some aspect of their operation in order to avoid being permitted, and all 26,000 would be required to develop and implement a PNP. Thus, while in theory fewer operations could be permitted, in fact more small enterprises would incur costs under a three-tier scenario. Section X.J.4 provides a summary of the difference in costs associated with these two options; more detailed information is provided in Section 9 of the Economic Analysis.

The three-tier structure allows States more flexibility to develop more effective non-NPDES programs to assist middle tier operations. The two-tier structure with a 500 AU threshold might limit access to federal funds, such as Section 319 nonpoint source program funds, for operations in the 500 to 1,000 AU range. The detailed conditions in the three-tier structure, however, do not meet the goal of today's proposal to simplify the NPDES regulation for CAFOs because it leaves in place the need for the regulated community and enforcement authorities to interpret a complicated set of conditions.

Chicken Threshold. During deliberations to select a threshold for dry chicken operations, EPA considered various options for relieving small business impacts. Under the two-tier structure, EPA examined a 100,000 bird threshold as well as a 50,000 bird threshold. Although the 50,000 bird threshold effects many more small chicken operations, analysis showed that setting the threshold at 100,000 birds would not be sufficiently environmentally protective in parts of the country that have experienced water quality degradation from the chicken industry. Section VII.C.2.f describes the relative benefits of each of these options. Nonetheless, because wet layer operations are currently regulated at 30,000 birds, raising the threshold to 50,000 birds will relieve some small businesses in this sector.

Elimination of the mixed animal calculation. EPA's is further proposing to mitigate the effects of today's proposal on small businesses by eliminating the mixed animal calculation for determining which AFOs are CAFOs. Thus, operations with mixed animal types that do not meet the size threshold for any single livestock category would not be defined as a CAFO. EPA expects that there are few AFOs with more than a single animal type that would be defined as CAFOs, since most mixed operations tend to be smaller in size. The Agency determined that the inclusion of mixed operations would disproportionately burden small businesses while resulting in little additional environmental benefit. Since

most mixed operations tend to be smaller in size, this exclusion represents important accommodations for small business. EPA's decision not to include smaller mixed operations is consistent with its objective to focus on the largest operations since these pose the greatest potential risk to water quality and public health given the sheer volume of manure generated at these operations.

Operations that handle larger herds or flocks take on the characteristics of being more industrial in nature, rather than having the characteristics typically associated with farming. These facilities typically specialize in a particular animal sector rather than having mixed animal types, and often do not have an adequate land base for agricultural use of manure. As a result, large facilities need to dispose of significant volumes of manure and wastewater which have the potential, if not properly handled, to cause significant water quality impacts. By comparison, smaller farms manage fewer animals and tend to concentrate less manure nutrients at a single farming location. Smaller farms tend to be less specialized and are more diversified, engaging in both animal and crop production. These farms often have sufficient cropland and fertilizer needs to land apply manure nutrients generated at a farm's livestock or poultry business for agricultural purposes.

For operations not defined as a CAFO, the Permit Authority would designate any facility determined to be a significant contributor of pollution to waters of the U.S. as a CAFO, and would consequently develop a permit based on best professional judgement (BPJ).

The estimated cost savings from eliminating the mixed animal calculation is indeterminate due to limited information about operations of this size and also varying cost requirements. EPA's decision is also expected to simplify compliance and be more administratively efficient, since the mixed operation multiplier was confusing to the regulated community and to enforcement personnel, and did not cover all animal types (because poultry did not have an AU equivalent).

Site-specific PNP's Rather than Mandated BMP's. In addition, while facilities that are defined or designated as CAFOs would be subject to specific performance standards contained with the permit conditions, EPA's proposed revisions also provide flexibility to small businesses. In particular, the revised effluent guidelines and NPDES standards and conditions are not specific requirements for design, equipment, or work practices, but rather

allow the CAFO operator to write site-specific Permit Nutrient Plans that implement the permit requirements in a manner appropriate and manageable for that business. This will reduce impacts to all facilities, regardless of size, by allowing operators to choose the least costly mix of process changes and new control equipment that would meet the limitations.

Demonstration of No Potential to Discharge. Finally, in both proposals, operations that must apply for a permit would have the additional opportunity to demonstrate to the permit authority that pollutants have not been discharged and have no potential to discharge into waters of the U.S. These operations would not be issued a permit if they can successfully demonstrate no potential to discharge. See section VII.D.3 for a discussion of demonstrating "no potential to discharge."

Measures Not Being Proposed. During the development of the CAFO rulemaking, EPA considered regulatory relief measures under the NPDES permit program that are not being proposed, including: (1) A "Good Faith Incentive," and (2) an "Early Exit" provision. These options are summarized below. More detail is provided in the SBREFA Panel Report (2000).

Under the "Good Faith Incentive," EPA considered incorporating an incentive for small CAFO businesses (i.e., AFOs with a number of animals below the regulatory threshold) to take early voluntary actions in good faith to manage manure and wastewater in accordance with the requirements of a nutrient management plan. In the event that such smaller AFOs have a discharge that would otherwise cause them to be designated as CAFOs, the CAFO regulations would provide an opportunity for these smaller AFOs to address the cause of the one-time discharge and avoid being designated as CAFOs.

Under the "Early Exit" provision, EPA considered a regulatory provision that would explicitly allow CAFOs with fewer animals than the regulatory threshold for large CAFOs to exit the regulatory program after five years of good performance. The regulations could allow such a smaller CAFO to exit the regulatory program if it demonstrates that it had successfully addressed the conditions that caused it to either be defined or designated as a CAFO.

EPA decided not to include either of these provisions in the proposed regulations following the SBAR Panel consultation process. Neither small businesses, SBA, OMB, nor EPA enforcement personnel expressed

support for either of these provisions. Also, the Early Exit provision was not deemed to provide additional regulatory relief over the current program, since an operation that has been defined or designated as a CAFO can already make changes at the operation whereby, after complying with the permit for the permit's five year term, the operation would no longer meet the definition of a CAFO and therefore would no longer be required to be permitted.

Both the regulatory relief measures selected and those considered but not selected are discussed in detail in Chapter 9 of the Economic Analysis, included in the Record for today's proposed rulemaking. EPA requests comment on the regulatory relief measures considered but not included in today's proposal.

3. How Does the Proposed Rule Change the Existing Designation Criteria and Procedure?

In the existing regulation, an operation in the middle tier, those with 300 AU to 1,000 AU, may either be defined as a CAFO or designated by the permit authority; those in the smallest category, with fewer than 300 AU, may only be designated a CAFO if the facility discharges: (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 direct contact with the confined animals. The permit authority must conduct an on-site inspection to determine whether the AFO is a significant contributor of pollutants. The two discharge criteria have proved difficult to interpret and enforce, making it difficult to take enforcement action against dischargers. Very few facilities have been designated in the past 25 years despite environmental concerns.

EPA's proposals on how, and whether, to amend these criteria vary with the alternative structure. Under a two-tier structure, EPA is proposing to eliminate these two criteria; under a three-tier structure, EPA is proposing to retain these two criteria.

Under the proposed two-tier structure with a 500 AU threshold, or under any other alternative two-tier structure such as with a 750 AU threshold, EPA is proposing to eliminate the two discharge criteria. Raising the NPDES threshold to 500 AU, 750 AU or 1,000 AU raises a policy question for facilities below the selected threshold but with more than 300 AU. Facilities with 300 to 1,000 AU are currently subject to

NPDES regulation (if certain criteria are met). To rely entirely on designation for these operations could be viewed by some as deregulatory, because the designation process is a time consuming and resource intensive process that makes it difficult to redress violations. It could also result in the inability of permit authorities to take enforcement actions against initial discharges unless they are from an independent point source at the facility. Otherwise, the initial discharge can only result in initiation of the designation process itself; enforcement could only take place upon a subsequent discharge. Unless the designation process can be streamlined in some way to enable permit authorities to more efficiently address those who are significant contributors of pollutants, raising the threshold too high may also not be sufficiently protective of the environment. While EPA could have proposed to retain the two criteria for those with fewer than 300 AU, and eliminate it only for those with greater than 300 AU but below the regulatory threshold, EPA believes that this would introduce unnecessary complexity into this regulation.

While eliminating the two discharge criteria, this proposal would retain the provision in the existing regulation that any AFO may be designated as a CAFO on a case-by-case basis if the NPDES permit authority determines that the facility is a significant contributor of pollutants to waters of the U.S. Today's proposal would not change the factors that the regulation lists as relevant to whether a facility is a significant contributor—see proposed § 122.23(b)(1) (listing factors such as: the size of the operation; the amount of wastewater discharged; the location of any potential receiving waters; means of conveyance of animal manure and process wastewater into waters of the U.S.; slope, vegetation, rainfall and other factors affecting the likelihood or frequency of discharge to receiving waters).

This proposal also retains the existing requirement that the permit authority conduct an on-site inspection before making a designation. No inspection would be required, however, to designate a facility that was previously defined or designated as a CAFO, although the permit authority may choose to do one.

Under a three-tier structure, EPA is proposing to retain the two discharge criteria used to designate an AFO with fewer than 300 AU as a CAFO. In this approach, facilities in the 300 AU to 1,000 AU size range must meet certain conditions for being considered a CAFO, and EPA considers this to be

sufficiently protective of the environment.

EPA is requesting comment on these two proposals, and also requests comment on three other alternatives. EPA could: (1) retain the two criteria even under a two-tier structure for all operations below the regulatory threshold; (2) retain the two criteria under a two-tier structure for only for those with fewer than 300 AU and eliminate the two criteria for those below the regulatory threshold but with greater than 300 AU; or (3) eliminate the criteria in the three-tier structure for those with fewer than 300 AU.

Significant concern was raised over the issue of designation during the SBREFA Panel process. At the time of the Panel, EPA was not considering eliminating these two criteria, and SERs and Panel members strongly endorsed this position. At that time, EPA's was focusing on a three-tier structure with revised conditions as the preferred option, and retaining the criteria was consistent with the revisions being considered. Since then, however, EPA's analysis has resulted in a strong option for a two-tier approach that would be simpler to implement and would focus on the largest operations. Once this scenario became a strong candidate, reconsideration of the two designation criteria was introduced. EPA realizes that this proposal has raised some concern in the small business community. However, EPA does not believe that eliminating these criteria will result in significantly more small operations being designated. Rather, it will enable the permit authority to ensure that the most egregious discharges of significant quantities of pollutants are addressed.

It is likely that few AFOs with less than 300 AU are significant contributors of pollutants, and permit authorities may be appropriately focusing scarce resources on larger facilities. Further, some also believe that it may be appropriate under a two-tier structure to retain the two criteria as well as the on-site inspection criterion to AFOs under the regulatory threshold, e.g. with fewer than 500 AU or 750 AU. SERs during the SBREFA process indicated that family farmers operating AFOs with fewer than 1,000 AU tend to have a direct interest in environmental stewardship, since their livelihood (e.g., soil quality and drinking water) often depends on it. They also argued that EPA should not divert resources away from AFOs with the greatest potential to discharge—those with 1,000 AU or more. EPA is soliciting comment on whether to retain the designation criteria for all AFOs below the

regulatory threshold in a two-tier structure, and whether this option will be protective of the environment.

While permit authorities have indicated that the requirement for an on-site inspection makes the designation process resource intensive, recommendations resulting from the SBREFA small business consultation process encouraged EPA not to remove the on-site inspection requirement. Some were concerned that EPA might do widespread blanket designations of large numbers of operations, especially in watersheds that have been listed under the CWA 303(d), Total Maximum Daily Load (TMDL) process. Thus, EPA is soliciting comment on whether to eliminate the requirement that the inspection be "on-site," perhaps by allowing, in lieu of on-site inspections, other forms of site-specific information gathering, such as use of monitoring data, fly-overs, satellite imagery, etc. Other parts of the NPDES program allow such information gathering and do not require inspections to be "on-site."

If the on-site requirement were eliminated, the permit authority would still need to make a determination that the facility is a significant contributor of pollution, which might necessitate an on-site inspection in many cases. On the other hand, in watersheds that are not meeting water quality standards for nutrients, the permit authority could designate all AFOs as CAFOs without conducting individual on-site inspections. Even in 303(d) listed watersheds, however, an operator of an individual facility might be able to demonstrate in the NPDES permit application that it has no potential to discharge, and request that it be exempted from NPDES requirements.

Due to the significant concerns of the small business community, EPA is not proposing at this time to eliminate the on-site inspection requirements, but, rather, EPA is soliciting comment on whether or not to eliminate this provision or to revise it to allow other forms of site-specific data gathering.

Finally, EPA is proposing a technical correction to the designation regulatory language. The existing CAFO NPDES regulations provide for designation of an AFO as a CAFO upon determining that it is a significant contributor of "pollution" to the waters of the U.S. 40 CFR 122.23(c). EPA is today proposing to change the term to "pollutants." Elsewhere in the NPDES regulations, EPA uses the phrase "significant contributor of pollutants" for designation purposes. 40 CFR 122.26(a)(1)(v). EPA is not aware of any reason the Agency would have used different terms for similar designation

standards, and is seeking consistency in this proposal. The Agency believes the term "pollutant" is the correct term. The Clean Water Act provides definitions for both "pollutant" and "pollution" in Section 502, but the NPDES program of Section 402 focuses specifically on permits "for the discharge of any pollutant, or combination of pollutants." Therefore, EPA believes it is appropriate to establish a designation standard for purposes of permitting CAFOs based on whether a facility is a significant contributor of "pollutants."

4. Designation of CAFOs by EPA in Approved States

Today's proposal would explicitly allow the EPA Regional Administrator to designate an AFO as a CAFO if it meets the designation criteria in the regulations, even in States with approved NPDES programs. See proposed § 122.23(b). As described in the preceding section, VII.C.4, AFOs that have not been defined as CAFOs may be designated as CAFOs on a case-by-case basis upon determination that such sources are significant contributors of pollution to waters of the United States. EPA's authority to designate AFOs as CAFOs would be subject to the same criteria and limitations to which State designation authority is subject.

The existing regulatory language is not explicit as to whether EPA has the authority to designate AFOs as CAFOs in States with approved NPDES programs. The current regulations state that "the Director" may designate AFOs as CAFOs. 40 CFR 122.23(c)(1). The existing definition of "Director" states: "When there is an approved State program, 'Director' normally means the State Director. In some circumstances, however, EPA retains the authority to take certain actions even where there is an approved State program." 40 CFR 122.2. Today's proposal would give EPA the explicit authority to designate an AFO as a CAFO in States with approved programs.

EPA does not propose to assume authority or jurisdiction to issue permits to the CAFOs that the Agency designates in approved NPDES States. That authority would remain with the approved State.

EPA believes that 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 (D.C. Cir. 1977). The interpretive authority arises

from CWA Section 501(a) when EPA interprets the term "point source" at CWA Section 502(14). EPA's proposal would ensure that EPA has the same authority to designate AFOs as CAFOs that need a permit as the Agency has to designate other storm water point sources as needing a permit. See 40 CFR 122.26(a)(2)(v).

EPA recognizes that many State agencies have limited resources to implement their NPDES programs. States may be hesitant to designate CAFOs because of concerns that regulating the CAFOs will require additional resources that could be used for competing priorities. In light of the increased reliance and success in control of point sources under general permits, however, the Agency believes that there will be only an incremental increase in regulatory burden due to the designated sources.

On August 23, 1999, the Agency proposed to provide explicit authority for EPA to designate CAFOs in approved States, but would have limited such authority to the designation of AFOs where pollutants are discharged into waters for which EPA establishes a total maximum daily load or "TMDL" and designation is necessary to ensure that the TMDL is achieved. 64 FR 46058, 46088 (August 23, 1999). EPA received comments both supporting and opposing the proposal. In promulgating the final TMDL rule, however, the Agency did not take final action on the proposed changes applicable to CAFOs. 65 FR 43586, 43648 (July 13, 2000), deciding instead to take action in this proposed rulemaking.

Today's proposal is intended to help ensure nationally consistent application of the provisions for designating CAFOs and is not focusing specifically at AFOs in impaired watersheds.

Implementation of the current rule in States with NPDES authorized programs has varied greatly from State to State, with several States choosing to implement non-NPDES State programs rather than a federally enforceable NPDES program. Public concerns have also been raised about lack of access to State non-NPDES CAFO programs. While several of today's proposed revisions would help to correct these disparities, EPA is concerned that there may be instances of significant discharges from AFOs that may not be addressed by State programs, and that are not being required to comply with the same standards and requirements expected of all AFOs. As part of their approved programs, States should designate AFOs that are significant sources of pollutants. EPA would have

the authority to designate AFOs as CAFOs, should that be necessary.

The Agency invites comment on this proposal.

5. Co-permitting Entities That Exert Substantial Operational Control Over a CAFO

EPA is proposing that permit authorities co-permit entities that exercise substantial operational control over CAFOs along with the owner/operator of the facility. See proposed § 122.23(a)(5) and (i)(4). While the permit authority currently may deem such entities to be "operators" under the Clean Water Act and require them to be permitted under existing legal requirements, today's proposal includes changes to the regulations to identify the circumstances under which co-permitting is required and how permit authorities are expected to implement the requirements. Because the existing definition of "operator" in 122.2 generally already encompasses operators who exercise substantial operational control, the Agency is seeking comment on whether this additional definition [or provision] is necessary.

For other categories of discharges, EPA's regulations states that contributors to a discharge "may" be co-permittees. See 40 CFR § 122.44(m). § 122.44(m) addresses the situation in which the co-permittees operate distinct sources and a privately owned treatment works is the owner of the ultimate point source discharge. In that context, EPA deemed it appropriate to give the permit writer the discretion to permit only the privately owned treatment works or the distinct sources, or both, depending on the level of control each exercises over the pollutants. In the context of CAFOs, however, the co-permittees both control some aspects of operations at the point source. Therefore, EPA is proposing that they must either be co-permittees or each must hold a separate permit.

Processor/Producer Relationship. As discussed below, proposed § 122.23(a)(5) is intended, at a minimum, to require permit authorities to hold certain entities that exercise substantial operational control over other entities jointly responsible for the proper disposition of manure generated at the CAFO. While under today's proposal a permit authority could require an entity that has substantial operational control over a CAFO to be jointly responsible for all of the CAFO's NPDES permit requirements, the proposal would allow the permit authority to allocate individual responsibility for various activities to any of the co-permittees. The proposed

rule would specify, however, that the proper disposition of manure must remain the joint responsibility of all the entities covered by the permit.

As discussed in more detail in section IV.C. of this preamble, among the major trends in livestock and poultry production are closer linkages between animal feeding operations and processing firms. Increasingly, businesses such as slaughtering facilities and meat packing plants and some integrated food manufacturing facilities are contracting out the raising or finishing production phase to a CAFO. Oftentimes, production contracts are used in which a contractor (such as a processing firm, feed mill, or other animal feeding operation) retains ownership of the animals and/or exercises substantial operational control over the type of production practices used at the CAFO. More information on the trends in animal agriculture and the evolving contractual relationships between producer and processors is presented in section IV.C of this preamble.

Use of production contracts varies by sector. Production contracting dominates U.S. broiler and turkey production, accounting for 98 percent of annual broiler production and 70 percent of turkey production. About 40 percent of all eggs produced annually are under a production contract arrangement. Production contracting in the hog sector still accounts for a relatively small share of production (about 30 percent of hog production in 1997), but use is rising, especially in some regions. Production contracts are uncommon at beef and dairy operations, although they are used by some operations to raise replacement herd or to finish animals prior to slaughter. Additional detail on the use of production contracts in these sectors is provided in section VI.

Although farmers and ranchers have long used contracts to market agricultural commodities, increased use of production contracts is changing the organizational structure of agriculture and is raising policy concerns regarding who is responsible for ensuring that manure and wastewater is contained on-site and who should pay for environmental improvements at a production facility. As a practical matter, however, regulatory authorities have limited ability to influence who pays for environmental compliance, since the division of costs and operational responsibilities is determined by private contracts, not regulation.

In addition, there is also evidence that the role of the producer-processor

relationship may influence where animal production facilities become concentrated, since animal feeding operations tend to locate in close proximity to feed and meat packing plants. This trend may be increasing the potential that excess manure nutrients beyond the need for crop fertilizer are becoming concentrated in particular geographic areas, thus raising the potential for increased environmental pressure in those areas. To further examine this possibility, EPA conducted an analysis of the correlation between areas of the country where there is a concentration of excess manure generated by animal production operations and a concentration of meat packing and poultry slaughtering facilities. This analysis concludes that in some areas of the country there is a strong correlation between areas of excess manure concentrations and areas where there is a large number of processing plants. More information on this analysis is provided in section IV.C.4 of this preamble.

Substantial Operational Control as Basis for Co-Permitting. Today's proposal would clarify that all entities that exercise substantial operational control over a CAFO are subject to NPDES permitting requirements as an "operator" of the facility. EPA's regulations define an owner or operator as "the owner or operator of any 'facility or activity' subject to regulation under the NPDES program." 40 CFR § 122.2. This definition does not provide further detail to interpret the term, and the Agency looks for guidance in the definitions of the term in other sections of the statute: "The term 'owner or operator' means any person who owns, leases, operates, *controls, or supervises* a source." CWA § 306(a)(4) (emphasis added).

Case law defining the term "operator" is sparse, but courts generally have concluded that through the inclusion of the terms owner and operator: "Liability under the CWA is predicated on either (1) performance of the work, or (2) responsibility for or control over the work." *U.S. v. Sargent County Water Resources Dist.*, 876 F.Supp 1081, 1088 (N.D. 1992). See also, *U.S. v. Lambert*, 915 F.Supp. 797, 802 (S.D.WVa. 1996) ("The Clean Water Act imposes liability both on the party who actually performed the work and on the party with responsibility for or control over performance of the work."); *U.S. v. Board of Trustees of Fla. Keys Community College*, 531 F.Supp. 267, 274 (S.D.Fla. 1981). Thus, under the existing regulation and existing case law, integrators which are responsible for or control the performance of the

work at individual CAFOs may be subject to the CWA as an operator of the CAFO. With today's proposal, EPA is identifying some factors which the Agency believes indicate that the integrator has sufficient operational control over the CAFO to be considered an "operator" for purposes of the CWA.

Whether an entity exercises substantial operational control over the facility would depend on the circumstances in each case. The proposed regulation lists factors relevant to "substantial operational control," which would include (but not be limited to) whether the entity: (1) Directs the activity of persons working at the CAFO either through a contract or direct supervision of, or on-site participation in, activities at the facility; (2) owns the animals; or (3) specifies how the animals are grown, fed, or medicated. EPA is aware that many integrator contracts may not provide for direct integrator responsibility for manure management and disposal. EPA believes, however, that the proposed factors will identify integrators who exercise such pervasive control over a facility that they are, for CWA purposes, co-operators of the CAFO.

This is a representative list of factors that should be considered in determining whether a co-permit is appropriate, but States should develop additional factors as needed to address their specific needs and circumstances. The greater the degree to which one or more of these or other factors is present, the more likely that the entity is exercising substantial operational control and, thus, the more important it becomes to co-permit the entity. For example, the fact that a processor required its contract grower to purchase and feed its animals feed from a specific source could be relevant for evaluating operational control. EPA will be available to assist NPDES permit authorities in making case-specific determinations of whether an entity is exerting control such that it should be co-permitted. EPA is also taking comment on whether there are additional factors which should be included in the regulation. EPA also requests comment on whether degree of participation in decisions affecting manure management and disposal is one of the factors which should be considered.

EPA is soliciting comment on whether, alternatively, the fact that an entity owns the animals that are being raised in a CAFO should be sufficient to require the entity to be a joint permittee as a owner. EPA believes that ownership of the animals establishes an ownership interest in the pollutant generating

activity at the CAFO that is sufficient to hold the owner of the animals responsible for the discharge of pollutants from the CAFO.

In non-CAFO parts of the NPDES regulations, the operator rather than the owner is generally the NPDES permit holder. One reason an owner is not required to get a permit is illustrated by an owner who has leased a factory. When an owner leases a factory to the lessee-operator, the owner gives up its control over the pollution-producing activities. The owner of animals at a feedlot, on the other hand, maintains all current interests in the animal and is merely paying the contract grower to raise the animals for the owner. It is the owner's animals that generate most of the manure and wastewater that is created at a CAFO. Therefore, EPA believes that ownership of the animals may be sufficient to create responsibility for ensuring that their wastes are properly disposed of. This may be particularly true where manure must be sent off-site from the CAFO in order to be properly disposed of.

EPA has previously identified situations where the owner should be the NPDES permittee rather than, or in addition to, the contract operator. In the context of municipal wastewater treatment plants, EPA has recognized that the municipal owner rather than the contract operator may be the proper NPDES permittee where the owner maintains some control over the plant.

If EPA selects this option, it might also clarify that ownership could be determined by factors other than outright title to the animals. This would prevent integrators from modifying their contracts so that they do not own the animals outright. EPA could develop factors for determining ownership such as the existence of an agreement to purchase the animals at a fixed price together with the integrator accepting the risk of loss of the animals prior to sale. EPA solicits comments on whether such criteria are necessary and, if so, what appropriate criteria would be.

Implementation of Co-Permitting. All permittees would be held jointly responsible for ensuring that manure production in excess of what can be properly managed on-site is handled in an environmentally appropriate manner. The effluent guidelines proposes to require a number of land application practices that will limit the amount of CAFO manure that can be applied to a CAFO's land application areas. If the CAFO has generated manure in excess of the amount which can be applied consistent with its NPDES permit, the proposed NPDES regulations impose a number of requirements on co-

permittees, described in VII.D.4. See proposed § 122.23(j)(4). The co-permittees could also transfer their excess manure to a facility to package it as commercial fertilizer, to an incinerator or other centralized treatment, to be transformed into a value-added product, or to any other operation that would not land apply the manure. EPA is proposing that manure that must leave the CAFO in order to be properly managed not be considered within the unique control of any of the entities with substantial operational control over the CAFO. In fact, an integrator that owns the animals at a number of CAFOs in an area which are producing manure in such volumes that it cannot be properly land applied may be in a unique position to be able to develop innovative means of compliance with the permit limits. Today's proposal would specify that the disposition of excess manure would remain the joint responsibility of all permit holders. See proposed § 122.23(i)(9). Integrators would thereby be encouraged to ensure compliance with NPDES permits in a number of ways, including: (a) establishing a corporate environmental program that ensures that contracts have sound environmental requirements for the CAFOs; (b) ensuring that contractors have the necessary infrastructure in place to properly manage manure; and (c) developing and implementing a program that ensures proper management and/or disposal of excess manure. The proposed requirement will give integrators a strong incentive to ensure that their contract producers comply with permit requirements and subject them to potential liability if they do not. Integrators could also establish facilities to which CAFOs in the area could transfer their excess manure. EPA is further proposing to require co-permitted entities to assume responsibility for manure generated at their contract operations when the manure is transferred off-site.

EPA believes that integrators will want to make good faith efforts to take appropriate steps to address the adverse environmental impacts associated with their business. EPA is soliciting comments on how to structure the co-permitting provisions of this rulemaking to achieve the intended environmental outcome without causing negative impacts on growers.

EPA also believes the proposal contains sufficient flexibility for permit authorities to develop creative, and streamlined, approaches to co-permitting. For example, a State might want to develop an NPDES general permit in collaboration with a single

integrator or, alternatively, with all integrators in a geographic region (e.g., statewide, watershed, etc.). Such a general permit might require integrators to assume responsibility for ensuring that their contractors engage in proper management practices for excess manure. As a condition of the NPDES general permit, the integrator could be obligated to fulfill its commitment or to assume responsibility for violations by its growers.

The proposed regulations would provide that a person is an "operator" when "the Director determines" that the person exercises substantial operational control over the CAFO. EPA also considered whether to delete the reference to a determination by the Director, so that any person who exercised such control over a CAFO would be an operator without the need for a determination by the Director. If EPA were to eliminate the need for a determination before such a person may be an "operator," persons who may meet this definition would be less certain in some cases as to whether they do in fact meet it. On the other hand, if EPA retains the need for a determination by the Director, then because of resource shortages or for other reasons, EPA or the State might not be able to make these determinations in a timely way, or might not make them at all in some cases. These persons would therefore inappropriately be able to avoid liability even though they are exercising substantial operational control of a CAFO. Accordingly, EPA requests comments on whether the final rule should retain the need for a determination by the Director of substantial operational control. Finally, EPA solicits comment on whether to provide that, in authorized States, either the Director or EPA may make the determination of substantial operational control.

Additional Issues Associated With Co-Permitting. The option of co-permitting integrators was discussed extensively by small entity representatives (SERs) and by the Small Business Advocacy Review Panel during the SBREFA outreach process. The SERs included both independent and contract producers. A majority of SERs expressed opposition to such an approach. They were concerned that co-permitting could decrease the operator's leverage in contract negotiations with the corporate entity, increase corporate pressure on operators to indemnify corporate entities against potential liability for non-compliance on the part of the operator, encourage corporate entities to interfere in the operational management

of the feedlot in order to protect against such liability, provide an additional pretext for corporate entities to terminate a contract when it was to their financial advantage to do so, restrict the freedom of operators to change integrators, and generally decrease the profits of the operator. These SERs were not convinced that co-permitting would result in any benefit to the environment, given that the operator generally controls those aspects of a feedlot's operations related to discharge, nor were they convinced that such an approach would result in additional corporate resources being directed toward environmental compliance, given the integrator's ability to pass on any additional costs it might incur as a result of co-permitting to the operator. A few SERs, who were not themselves involved in a contractual relationship with a larger corporate entity, favored co-permitting as a way of either leveling the playing field between contact and independent operators, or extracting additional compliance resources from corporate entities. Despite general concern over co-permitting due to the economic implications for the contractor, several SERs voiced their support for placing shared responsibility for the manure on the integrators, especially in the swine sector.

The Panel did not reach consensus on the issue of co-permitting. On the one hand, the Panel shared the SER's concern that co-permitting not serve as a vehicle through which the bargaining power and profits of small contract growers are further constrained with little environmental benefit. On the other, the Panel believed that there is a potential for environmental benefits from co-permitting. For example, the Panel noted (as discussed above), that co-permitted integrators may be able to coordinate manure management for growers in a given geographic area by providing centralized treatment, storage, and distribution facilities, though the Panel also pointed out that this could happen anyway through market mechanisms without co-permitting if it resulted in overall cost savings. In fact, the Agency is aware of situations where integrators do currently provide such services through their production contracts. The Panel also noted that co-permitting could motivate corporate entities to oversee environmental compliance of their contract growers, in order to protect themselves from potential liability, thus providing an additional layer of environmental oversight.

The Panel also expressed concern that any co-permitting requirements may

entail additional costs, and that co-permitting can not prevent these costs from being passed on to small operators, to the extent that corporate entities enjoy a bargaining advantage during contract negotiations. The Panel thus recommended that EPA carefully consider whether the potential benefits from co-permitting warrant the costs, particularly in light of the potential shifting of these costs from corporate entities to contract growers. The Panel further recommended that if EPA does propose any form of co-permitting, it address in the preamble both the environmental benefits and any economic impacts on small entities that may result and request comment on its approach.

As discussed in Section VI, EPA estimates that 94 meat packing plants that slaughter hogs and 270 poultry processing facilities may be subject to the proposed co-permitting requirements. EPA expects that no meat packing or processing facilities in the cattle and dairy sectors will be subject to the proposed co-permitting requirements. Reasons for this assumption are summarized in Section VI of this preamble. Additional information is provided in Section 2 of the Economic Analysis. EPA is seeking comment on this assumption as part of today's notice.

EPA did not precisely estimate the costs and impacts that would accrue to individual co-permittees. Information on contractual relationships between contract growers and processing firms is proprietary and EPA does not have the necessary market information and data to conduct such an analysis. Market information is not available on the number and location of firms that contract out the raising of animals to CAFOs and the number and location of contract growers, and the share of production, that raise animals under a production contract. EPA also does not have data on the exact terms of the contractual agreements between processors and CAFOs to assess when a processor would be subject to the proposed co-permitting requirements, nor does EPA have financial data for processing firms or contract growers that utilize production contracts.

EPA, however, believes that the framework used to estimate costs to CAFO does provide a means to evaluate the possible upper bound of costs that could accrue to processing facilities in those industries where production contracts are more widely utilized and where EPA believes the proposed co-permitting requirements may affect processors. The details of this analysis are provided in Section X.F.2. Based on

the results of this analysis, EPA estimates that the range of potential annual costs to hog processors is \$135 million to \$306 million (\$1999, pre-tax). EPA estimates that the range of potential annual costs to broiler processors as \$34 million to \$117 million. EPA is soliciting comment on this approach.

This approach does not assume any addition to the total costs of the rule as a result of co-permitting, yet it does not assume that there will be a cost savings to contract growers as result of a contractual arrangement with a processing firm. This approach merely attempts to quantify the potential magnitude of costs that could accrue to processors that may be affected by the co-permitting requirements. Due to lack of information and data, EPA has not analyzed the effect of relative market power between the contract grower and the integrator on the distribution of costs, nor the potential for additional costs to be imposed by the integrator's need to take steps to protect itself against liability and perhaps to indemnify itself against such liability through its production contracts. EPA has also not specifically analyzed the environmental effects of co-permitting.

EPA recognizes that some industry representatives do not support assumptions of cost passthrough from contract producers to integrators, as also noted by many small entity representatives during the SBREFA outreach process as well as by members of the SBAR Panel. These commenters have noted that integrators have a bargaining advantage in negotiating contracts, which may ultimately allow them to force producers to incur all compliance costs as well as allow them to pass any additional costs down to growers that may be incurred by the processing firm. EPA has conducted an extensive review of the agricultural literature on market power in each of the livestock and poultry sectors and concluded that there is little evidence to suggest that increased production costs would be prevented from being passed on through the market levels. This information is provided in the docket.

EPA requests comments on its cost passthrough assumptions in general and as they relate to the analysis of processor level impacts under the proposed co-permitting requirements. EPA will give full consideration to all comments as it decides whether to include the proposed requirement for co-permitting of integrators in the final rule, or alternately whether to continue to allow this decision to be made on a case-by-case basis by local permit writers. Several other alternatives to co-permitting are discussed below. EPA

also requests comment on how to structure the co-permitting provisions of the rule making to achieve the intended environmental outcome without causing negative impacts on growers, should it decide to finalize them.

Alternatives to Co-Permitting. EPA also considered alternative approaches under which EPA would waive the co-permitting requirement for States and processors that implement effective programs for managing excess manure and nutrients. One such approach would require the disposition of manure that is transported off-site to remain the joint responsibility of the processor and other permit holders, unless an enforceable state program controls the off-site land application of manure. For example, if the State program addressed the off-site land application of manure with PNP development and implementation requirements that are equivalent to the requirements in 40 CFR 412.13(b)(b) and 122.23(j)(2), it would not be necessary to permit the processor in order to ensure the implementation of those requirements.

Another approach would be based on whether the processor has developed an approved Environmental Management System (EMS) that is implemented by all of its contract producers and regularly audited by an independent third party. EPA anticipates that the alternative program would be designed to achieve superior environmental and public health outcomes by addressing factors beyond those required in this proposed regulation, such as odor, pests, etc. The following section describes the principles of such a system.

Environmental Management System as Alternative to Co-Permitting. An increasing number of organizations, in both the private and public sector, are using environmental management systems (EMS) as a tool to help them not only comply with environmental legal requirements, but also address a full range of significant environmental impacts, many of which are not regulated. Environmental management systems include a series of formal procedures, practices, and policies that allow an organization to continually assess its impacts on the environment and take steps to reduce these impacts over time, providing an opportunity and mechanism for continuous improvement. EMSs do not replace the need for regulatory requirements, but can complement them and help organizations improve their overall environmental performance. EPA supports the adoption of EMSs that can help organizations improve their compliance and overall performance

and is working with a number of industries to help them adopt industry-wide EMS programs.

Under this alternative, EPA would not require a processor to be co-permitted with their producers if the processor has developed, in conjunction with its contract producers, an EMS program that is approved by the permit authority and EPA, including opportunities for review and comment by EPA and the public. The EMS would identify the environmental planning and oversight systems, and critical management practices expected to be implemented by all of the processors' contract growers. Independent third-party auditors annually would verify effective implementation of the EMS to the permit authority and integrator. If a processor agreed to implement such a program, and then one or more of its contract producers failed to meet these requirements, the processor would remove animals from the contract producers farm, in a time and manner as defined in the approved EMS, and not supply additional animals until the contract producer is certified as being in compliance with the EMS by the third party auditor. Once the animals have been removed, processors would not continue contractual relationships with producers not capable or willing to meet the minimum requirements of the EMS. Processors who fail the independent audit would be required to apply for an NPDES permit or be included as a co-permittee on contract producers' permits.

Each permitted facility's EMS would also require that programs be in place to ensure that it remained in compliance with its NPDES permit (if a permitted facility). For all contractors, the EMS would address all activities that could have a significant impact on the environment, including activities not subject to this proposed regulations. These best management practices could be adapted to meet the particular needs of individual States, as appropriate.

To ensure consistency, contract growers and the processor would be required to be annually audited by an independent third party. The permit authority would be expected to develop criteria for the audit, including what constitutes acceptable implementation of the EMS by both contract producers and the processor. Such an EMS would require contract producers to comply with their NPDES permit (if a permitted facility) and to implement the terms of the EMS that address manure management as well as other unregulated impacts like odor, pests, etc. Contract producers would need to employ specific Best Management

Practices (BMPs) when addressing unregulated impacts and maintain specific records on their use. BMPs could be adapted to meet the needs of a particular state or region.

The EMS would be required to be consistent with guidance developed by the processor and approved by the permit authority and EPA. Processors would assume responsibility for developing, in conjunction with contract producers, the proposed EMS as well as the proposed third party auditing guidance, which would be subject to approval by the permit authority and EPA. Further, the processors would facilitate implementation by their producers through training and technical assistance.

Each facility's EMS would be required to successfully complete an audit conducted by an independent third party organization approved by the permit authority. Facilities would also be subject to annual follow up audits designed to determine if the EMS was in place and being adequately implemented. Contractors would not continue contractual relationships with producers that did not remain in compliance and did not continue to adequately implement their EMSs, as determined by annual third party follow-up audits.

Each processor would be required to seek input from local stakeholders as it developed and implemented its EMS. Further, information about EMS implementation, including audit results, would be publicly available.

Because geographic areas tend to be dominated by few processors, contract growers tend to have limited choice in selecting with whom to have a production contract. Thus, EPA expects that processors would provide economic and technical assistance to help contract producers implement the EMS.

EPA sees potential benefits to this type of approach. Besides giving processors an incentive to develop regional approaches to managing excess manure nutrients from CAFO generated manure, it would involve the processors in ensuring that permittees meet their permit requirements, thus relieving burden on the resources of permit authorities and EPA. Further, an EMS goes beyond what NPDES requires, in that it addresses issues beyond the scope of this rulemaking, such as odor, pests, etc., and, most important, it will address manure generated by all CAFOs as well as all AFOs under contract with the processors. Finally, this approach will provide local stakeholders with important information about the operations of producers and give these

stakeholders meaningful opportunities to provide input to the facility on its operations throughout the permitting and EMS development process.

On the other hand, an EMS approach could be more difficult to administer and enforce. Some also question whether it would be appropriate to impose the requirements of an EMS on independent growers or AFO operators who trade with the processors, but who are not subject to this regulation. Further, it could be a concern that a producer might, seemingly arbitrarily, refuse resources to assist with implementing the EMS, and then subsequently withholding animals from the grower and effectively terminating the contract.

EPA solicits comment on whether EPA should provide an option for States to develop an alternative program for addressing excess manure in lieu of requiring co-permitting. EPA also requests comment on the EMS concept described in detail in this proposal.

6. How Does EPA Propose To Regulate Point Source Discharges at AFOs That Are Not CAFOs?

EPA is proposing to clarify in today's proposed rulemaking that all point source discharges from AFOs are covered by the NPDES regulations even if the facility is not a CAFO (except for certain discharges composed entirely of storm water, as discussed below). See proposed § 122.23(g).

The definition of point source in the CWA and regulations lists both discrete conveyances (such as pipes and ditches) and CAFOs. CWA § 502(14); 40 CFR 122.2. EPA wants to confirm as explicitly as possible that the NPDES regulatory program applies to both types of discharges. Thus, where an AFO is not a CAFO (either because it has not met the definition criteria or has not been designated) discharges from the AFO are still regulated as point source discharges under the NPDES program if the discharge is through a discrete conveyance that would qualify itself as a point source. An AFO is not excluded from the NPDES regulatory program altogether simply because it is not a CAFO. That is, if an AFO has a point source discharge through a pipe, ditch, or any other type of discernible, confined and discrete conveyance, it is subject to NPDES requirements just the same as any other facility that has a similar point source discharge and that is not an AFO.

Today's proposal would clarify that, even though an AFO is not a CAFO, an AFO may nevertheless require an NPDES permit due to discharges from a point source at the facility. See

proposed § 122.23(g). More specifically, under existing regulation and today's proposal, an AFO may be subject to regulation under the Clean Water Act in any of the following ways:

(1) *Non-storm water discharges.* A non-storm water discharge of pollutants from a point source, such as a ditch, at the production area or land application area of an AFO, into waters of the U.S. is a violation of the CWA unless the owner or operator of the facility has an NPDES permit for the discharge from that point source (as discussed further below); or

(2) *Storm water discharges.* A discharge from a point source, such as a ditch, at the land application area of an AFO that does not qualify for the agricultural storm water discharge exemption may be designated as a regulated storm water point source under § 122.26(a)(1)(v), and, therefore, require an NPDES permit. The agricultural storm water exemption is discussed further in the following section D; or

(3) *Discharge as a CAFO.* An AFO may be designated as a CAFO and, therefore, require an NPDES permit on that basis (as discussed in the section on designation).

In addition to listing "physical" conveyances (such as pipes and ditches), the definition of point source in the CWA and EPA's regulations identifies CAFOs as a point source. CWA § 502(14); 40 CFR 122.2. Because all CAFOs are point sources, even surface run off from a CAFO that is not channelized in a discrete conveyance is considered a point source discharge that is subject to NPDES permit requirements. AFOs, on the other hand, are not defined as point sources. Because of that, under today's proposal, AFOs will be subject to NPDES permitting requirements if they have a point source discharge including under the circumstances described above.

First, today's proposal states clearly that an AFO which has a discharge of pollutants through a point source, such as a pipe or ditch, at either the production area or the land application area, to the waters of the United States which is not the direct result of precipitation is in violation of the Clean Water Act. See proposed § 122.23(g). The existing regulations are silent and some AFO operators have argued that none of their discharges can be considered point source discharges unless their AFO is defined or designated as a CAFO under 40 CFR 122.23. Today's proposal would make it clear that certain discharges at AFOs are subject to NPDES requirements and no designation by the permitting authority

is required. For example, if the operator of an AFO with less than 500 animal units (in the two-tier structure) or less than 300 animal units (in the three-tier structure) empties its lagoon via a pipe directly into a stream without an NPDES permit, that would be a violation of the Clean Water Act.

Second, today's proposal clarifies that a storm water discharge composed entirely of storm water from a point source at the land application area of an AFO into waters of the U.S. requires an NPDES permit if: (1) the discharge does not qualify for the agricultural storm water discharge exemption, discussed below; and (2) it is designated as a regulated storm water point source. Generally, all point source discharges are prohibited unless authorized by an NPDES permit. Section 402(p) of the Clean Water Act exempts certain storm water discharges from that general prohibition. Section 402(p)(2)(E) and the EPA regulations that implement Section 402(p)(6) provide for regulation of unregulated point sources on a case by case basis upon designation by EPA or the State permitting authority (40 CFR 122.26(a)(1)(v)).

EPA considered proposing that only 40 CFR 122.23 may be used to designate an AFO based on discharges from its land application area. Designation as a CAFO, however, could unnecessarily subject the AFO's production area to NPDES permit requirements. Also, because the land application area of third party applicators of manure may be designated using 122.26(a)(1)(v), EPA is proposing that AFO controlled land application areas could also be designated under that section, even if the AFO has not been designated as a CAFO. AFOs may be required to get a permit based on storm water discharges from their production areas only if they have been designated as a CAFO under § 122.23.

An AFO operator is not required to obtain a permit for a point source discharge at the land application area which consists entirely of storm water, and which does not qualify for the agricultural storm water discharge exemption, unless the point source has been designated under 40 CFR 122.26(a)(1)(v). A discharge consists entirely of storm water if it is due entirely to precipitation. It may include incidental pollutants that the storm water picks up while crossing the facility. The discharge would not consist entirely of storm water if, for example, a non-storm water (e.g., process waste water) discharge occurs during the storm and is mixed with the storm water. Once a permit authority has determined that a point source

discharge from the land application area of an AFO is not composed entirely of storm water and does not qualify for the agricultural storm water discharge exemption, the permit authority may designate that point source as a regulated storm water point source if the permit authority further determines under 40 CFR 122.26(a)(1)(v) that the discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the U.S.

Designation under § 122.26 is separate from the designation of an operation as a CAFO. The criteria for designation as a CAFO based on discharges from either the land application or the production area are discussed above in C.4.

D. Land Application of CAFO-generated Manure

1. Why Is EPA Regulating Land Application of CAFO-generated Manure?

As discussed in Section IV.B of this preamble, agricultural operations, including animal production facilities, are considered a significant source of water pollution in the United States. The recently released National Water Quality Inventory indicates that agriculture is the leading contributor of identified water quality impairments in the nation's rivers and streams, as well as in lakes, ponds, and reservoirs. Agriculture is also identified as a major contributor to identified water quality impairments in the nation's estuaries.

Pollutant discharges from CAFOs arise from two principal routes. The first route of discharges from CAFOs is from manure storage or treatment structures, especially catastrophic failures, which cause significant volumes of often untreated manure and wastewater to enter waters of the U.S. resulting in fish kills. The second route of pollutant discharges is from the application of manure to land, usually for its fertilizer value or as a means of disposal. Additional information on how pollutants from CAFOs reach surface waters is provided in Section V.B of this document and in the rulemaking record.

The proposed regulation seeks to improve control of discharges that occur from land applied manure and wastewater. Analysis conducted by USDA indicates that, in some regions, the amount of nutrients present in land applied manure has the potential to exceed the nutrient needs of the crops grown in those regions. Actual soil sample information compiled by researchers at various land grant universities provides an indication of areas where there is widespread

phosphorus saturation. Other research by USDA documents the runoff potential of land applied manure under normal and peak precipitation. Furthermore, research from a variety of sources indicates that there is 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. This information is documented in the Technical Development Document. Additional information is available in the Environmental Assessment of the Proposed Effluent Limitations Guidelines for Concentrated Animal Feeding Operations and other documents that support today's rulemaking.

2. How Is EPA Interpreting the Agricultural Storm Water Exemption With Respect to Land Application of CAFO-generated Manure?

Today, EPA is proposing to define the term "agricultural stormwater discharge" with respect to land application of manure and wastewater from animal feeding operations. Section 502(14) of the Clean Water Act excludes "agricultural stormwater discharges" from the definition of the term point source. The Clean Water Act does not further define the term, and the Agency has not formally interpreted it. Under today's proposal, an "agricultural stormwater discharge" would be defined as "a discharge composed entirely of storm water, as defined in 40 CFR 122.26(a)(13), from a land area upon which manure and/or wastewater from an animal feeding operation or concentrated animal feeding operation 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." § 122.23(a)(1).

The CWA defines a point source as: "any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged. The term does not include agricultural stormwater discharges and return flows from irrigated agriculture." 33 U.S.C. § 1362(14).

Congress added the exemption from the definition of point source for "agricultural stormwater discharges" in the Water Quality Act of 1987. There is limited legislative history for this provision; Congress simply stated that

the "provision expands the existing exemption for return flows from irrigated agriculture to include agricultural stormwater discharges." *Legislative History of the Water Quality Act of 1987*, 100th Cong., 2d. Sess. at 538 (1988).

The courts have found that the EPA Administrator has the discretion to define point and nonpoint sources. *NRDC v. Costle*, 568 F.2d 1369, 1382 (D.C. Cir. 1977). EPA is proposing to exercise that discretion by defining the exemption for "agricultural stormwater discharges" to include only those discharges that (1) are composed entirely of storm water; and, (2) occur only after the implementation of proper agricultural practices.

EPA believes the first component is clear on the face of the statute. Only discharges that result from precipitation can qualify for an agricultural storm water discharge exemption. Therefore, the addition of pollutants as a result of a discharge from a point source to waters of the United States that is not due to precipitation is a violation of the Clean Water Act (except in compliance with an NPDES permit). For example, the application of CAFO manure onto a field in quantities that are so great that gravity conveys the manure through a ditch even in dry weather into a nearby river would not be eligible for the exemption for agricultural storm water discharges. Furthermore, it is possible for a discharge to occur during a precipitation event yet not be considered to be "composed entirely of stormwater." As the Second Circuit found, a discharge during a storm could be "primarily caused by the over-saturation of the fields rather than the rain and * * * sufficient quantities of manure were present so that the run-off could not be classified as "stormwater'." *CARE v. Southview Farms*, 34 F.3d 114,121 (Sept. 2, 1994).

Second, EPA is proposing that to be eligible for the exemption for agricultural storm water, any addition of manure and/or wastewater to navigable waters must occur despite the use of proper agricultural practices. EPA interprets the statute to reflect Congress' intent not to regulate additions of manure or wastewater that are truly agricultural because they occur despite the use of proper agricultural practices. Application of manure or wastewater that is not consistent with proper rates and practices such that there are adverse impacts on water quality would be considered waste disposal rather than agricultural usage. In today's action, EPA is proposing to interpret the term "proper agricultural practices" to incorporate the concept of protecting

water quality. This is consistent with USDA's Technical Guidance for Developing Comprehensive Nutrient Management Plans, which states that: "[t]he objective of a CNMP is to provide AFO owners/operators with a plan to manage generated nutrients and by-products by combining conservation practices and management activities into a system that, when implemented, will protect or improve water quality." EPA believes that proper agricultural practices do encompass the need to protect water quality. While EPA recognizes that there may be legitimate agricultural needs that conflict with protecting water quality in some instances, EPA believes that its proposed definition of proper agricultural practices strikes the proper balance between these objectives. Since one focus of agricultural management practices, whether through guidance or regulation, at the state or federal level, is the minimization of water quality impacts, and since this is of particular concern to EPA, the Agency is proposing a definition of "agriculture" for Clean Water Act purposes which would be flexible enough so that an assessment of the actual impacts of a discharge of animal waste on a specific waterbody could be factored in. Today's proposal identifies the proper agricultural practices which land applicators seeking to qualify for the agricultural storm water discharge exemption would need to implement. In addition, if a permit authority determined that despite the implementation of the practices identified in today's proposal, discharges from the land application area of a CAFO were having an impact on water quality, the permit writer would need to impose additional agricultural practice requirements to mitigate such impacts. Only discharges that occur despite the implementation of all these proper agricultural practices would be considered "agricultural stormwater discharges" and be eligible for the exemption. EPA requests comment on this interpretation of the agricultural storm water exemption and on the proposal to define proper agricultural practice.

For CAFOs which land apply their manure, the Agency is proposing to require that owners or operators implement specific agricultural practices, including land application of manure and wastewater at a specified rate, development and implementation of a Permit Nutrient Plan, a prohibition on the application of CAFO manure or wastewater within 100 feet of surface water, and, as determined to be

necessary by the permit authority, restrictions on application of manure to frozen, snow covered or saturated ground. See proposed §§ 412.31(b) and 412.37; § 122.21(j). The Agency is proposing to require these specific agricultural practices under its CWA authority both to define the scope of the agricultural storm water discharge exemption and to establish the best available technology for specific industrial sectors. Given the history of improper disposal of CAFO waste and Congress' identification of CAFO's as point sources, the Agency believes it should clearly define the agricultural practices which must be implemented at CAFOs.

EPA considered limiting the scope of the proper agricultural practices necessary to qualify for the agricultural storm water discharge exemption to those specified in the effluent guideline and NPDES regulations with no flexibility for the permit authority to consider additional measures necessary to mitigate water quality impacts. EPA chose not to propose this option because EPA was concerned that permit authorities would then be unable to include any additional permit conditions necessary to implement Total Maximum Daily Loads in impaired watersheds. EPA seeks comment on this option and other ways to address this concern.

The Agency is proposing to allow AFO owners or operators who land apply manure (either from their own operations or obtained from CAFOs) and more traditional, row crop farmers who land apply manure obtained from CAFOs to qualify for the agricultural storm water discharge exemption as long as they are applying manure and wastewater at proper rates. As discussed in VII.B, under one of today's co-proposed options, CAFOs that transfer manure to such recipients would be required to obtain a letter of certification from the recipient land applicator that the recipient intends to determine the nutrient needs of its crops based on realistic crop yields for its area, sample its soil at least once every three years to determine existing nutrient content, and not apply the manure in quantities that exceed the land application rates calculated using either the Phosphorus Index, Phosphorus Threshold, or Soil Test Phosphorus method as specified in 40 CFR 412.13(b)(1)(iv). For purposes of the CAFO's permit, recipient land applicators need not implement all of the proper agricultural practices identified above which CAFOs would be required to implement at their own land application areas. EPA believes that this proposal enables the Agency to

implement Congress' intent to both exclude truly agricultural discharges due to storm water and regulate the disposition of the vast quantities of manure and wastewater generated by CAFOs.

EPA considered defining the agricultural storm water discharge exemption for non-CAFO land applicators to apply only to those discharges which occurred despite the implementation of all the practices required by today's proposal at CAFO land application areas. EPA could require a more comprehensive set of practices for land applicators of CAFO manure and wastewater to qualify for the agricultural storm water discharge exemption. Under any definition of proper agricultural practices, a recipient who failed to implement the required practices and had a discharge through a point source into waters of the U.S. could be designated as a regulated storm water point source. However, that recipient would not be vulnerable to enforcement under the Clean Water Act for discharges prior to designation, and could only be designated as a point source if the permitting authority (or EPA in authorized States) found that the conditions of 40 CFR 122.26(a)(1)(v) were met. See discussion below. EPA is requesting comment on this option.

Whether a discharger (who would otherwise be ineligible for the agricultural storm water discharge exemption) is subject to the Clean Water Act permitting requirements varies, because of the complex interaction among the agricultural storm water discharge exemption, the definition of "point source," and other storm water discharge provisions. The next sections clarify EPA's intentions with regard to such regulation.

3. How is EPA Proposing To Regulate Discharges From Land Application of CAFO-generated Manure by CAFOs?

In today's action, EPA is proposing that the entire CAFO operation (*e.g.* the feedlot/production area and the land application areas under the operational control of a CAFO owner or operator) is subject to the revised effluent limitations guideline and the revised NPDES permitting regulation. See proposed § 122.23(a)(2). Also, as discussed above, EPA is proposing to interpret the CWA to allow CAFO land application areas to be eligible for the agricultural storm water discharge exemption. However, unless the CAFO could demonstrate that it has absolutely no potential to discharge from the production area and the land application area, the facility would be required to apply for an NPDES permit.

See proposed § 122.23(e). While EPA is proposing to interpret the terms of the statute such that CAFOs may qualify for the agricultural storm water exemption, EPA is also proposing that such CAFOs must apply for a permit even if the CAFO's only discharges may potentially qualify for the agricultural storm water discharge exemption. EPA is proposing such a requirement because it has the authority to regulate point source discharges and any discharge 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 all nonagricultural, and therefore point source, discharges from CAFOs are permitted is to require that CAFOs apply for NPDES permits which will establish effluent limitations based on proper agricultural practices.

As noted above, the CWA explicitly defines the term "point source" to include CAFOs, and explicitly excludes agricultural storm water discharges. In today's action, EPA is attempting to interpret both provisions in a way that establishes meaningful controls over a significant source of pollution in our Nation's waters. EPA is proposing to interpret the definition of "point source" such that the exclusion of "agricultural stormwater discharges" may be an exclusion from any and all of the conveyances listed in the definition of "point source," including "concentrated animal feeding operations." The production area of the CAFO would continue to be ineligible for the agricultural storm water discharge exemption because it involves the type of industrial activity that originally led Congress to single out concentrated animal feeding operations as point sources. However, the land application areas under the operational control of the CAFO, where CAFO manure or wastewater is appropriately used as a fertilizer for crop production, appear to have the kind of agricultural activity that Congress intended to exempt. Consequently, EPA proposes to interpret the CWA so that its authority to regulate discharges of CAFO manure due to precipitation from land application areas is used in a way that ensures that any discharge is the result of agricultural practices. Any such discharges would be from the CAFO and, therefore, no separate, confined and discrete conveyance need be present.

Under today's proposal, permit writers would establish effluent limits for land application areas in the form of rates and practices that constitute proper agricultural practices to the extent necessary to fulfill the

requirements of the effluent guidelines or based on BPJ, as well as to the extent necessary to ensure that a CAFO's practices are agricultural in that they minimize the operation's impact on water quality.

As noted above, EPA believes the statute does not directly address the interaction between the specific listing of "concentrated animal feeding operations" and the specific exemption of "agricultural stormwater discharges" in the definition of "point source." While EPA is proposing to interpret the Act to allow the land application areas of CAFOs to be eligible for the agricultural storm water discharge exemption, EPA is considering an interpretation of the Act under which all additions of pollutants associated with CAFOs could be regulated as "point source" discharges, and, thus, the agricultural storm water exemption would never apply to discharges from a CAFO. By singling out "concentrated animal feeding operations," a far more specific conveyance reference compared to the other, more general, terms in the definition of "point source" (such as "ditch," "channel," and "conduit"), Congress may have intended the addition of pollutants to waters of the United States from these facilities to be considered "industrial" and not "agricultural" discharges. As such, the tremendous amount of manure and wastewater generated by CAFOs could be considered industrial waste. Thus, any discharge, even if caused by storm water after land application of the manure could be considered a discharge "associated with industrial activity" under the statute's storm water discharge provisions.

EPA is soliciting comments on four additional approaches under which the agricultural storm water exemption would not apply to CAFOs. Each of these approaches would require that all CAFO permits restrict discharges from land application sites to the extent necessary to prevent them from causing or contributing to a water quality impairment.

First, EPA is soliciting comment on an alternate approach that would regulate CAFO waste as "process waste" that is not eligible for the agricultural storm water exemption, when it is applied on land that is owned or controlled by the CAFO owner or operator, because it is industrial process waste and therefore not agricultural. Any storm water associated discharges would be regulated under the existing storm water statutory provisions and EPA's implementing regulations. Under that approach, in addition to the requirements in the proposed effluent

limitation guideline, the NPDES permit issued to the CAFO operator would include any additional limitations necessary to protect water quality.

Second, EPA solicits comment on classifying discharges from land application sites as discharges regulated under "Phase I" of the NPDES storm water program (CWA Section 402(p)(2)(B)). EPA's existing storm water regulations already identify discharges from land application sites that receive industrial wastes as a "storm water discharge associated with industrial activity." 40 CFR 122.26(b)(14)(v). Under the storm water regulation, EPA does not currently interpret that category (*i.e.*, storm water discharge associated with industrial activity) to include land application of CAFO manure because the Agency did not assess the cost of such regulation when it promulgated the rule. With today's proposal, however, EPA has calculated the cost of proper land application of CAFO-generated manure and wastewater and could clarify that precipitation-induced discharges from land application areas are subject to the storm water discharge regulations. If EPA finalizes a definition of CAFO which includes the land application area, then EPA could also regulate any storm water discharges from CAFOs under its existing regulations as a storm water discharge associated with industrial activity because facilities subject to storm water effluent guidelines are considered to be engaging in "industrial activity." 40 CFR 122.26(b)(14)(i). EPA would have to conclude that no discharges from CAFO land application areas qualify for the agricultural storm water discharge exemption, even discharges which occur despite implementation of proper agricultural practices.

Third, EPA could consider discharges from the CAFO's land application area to be discharges of "process wastewater," and, therefore, not "composed entirely of stormwater," rendering the statutory storm water provisions entirely inapplicable. Under this alternate interpretation of the statutory terms, NPDES permit provisions for the CAFO, including both the production area and the land application area, could include both technology-based limits and any necessary water quality-based effluent limits.

Fourth, EPA could clarify that once a facility is required to be permitted because it is a CAFO, the agricultural storm water discharge exemption no longer applies to the land application area subject to the permit. Thus, all permit conditions, including a water

quality-based effluent limitation, could be required on both the production area and the land application area.

EPA is also requesting comment on whether the land application practices established under the effluent guidelines will be sufficient to ensure that there will be little or no discharge due to precipitation from CAFO land application areas. If there were no such discharges, then EPA wouldn't need to adopt any of the four alternative approaches described above, because the effluent guidelines requirements would protect water quality. If there would be significant run-off even when manure is applied in accordance with agricultural practices, EPA is requesting comment on the extent and the potential adverse water quality impacts from that increment.

4. How is EPA Proposing to Regulate Land Application of Manure and Wastewater by non-CAFOs?

In some instances, CAFO owners or operators transport their manure and/or wastewater off-site. If off-site recipients land apply the CAFO-generated manure, they may be subject to regulation under the Clean Water Act. In addition, AFOs may land apply their own manure and wastewater, and they too may be subject to regulation under the Clean Water Act. A land applier could be subject to regulation if: (1) its field has a point source, as defined under the Act, through which (2) a discharge occurs that is not eligible for the agricultural storm water exemption, and (3) the land applier is designated on a case-by-case basis as a regulated point source of storm water. 40 CFR § 122.26(a)(1)(v). EPA notes that under the three-tier structure, an AFO with between 300 AU and 1,000 AU which has submitted a certification that it does not meet any of the conditions for being CAFO, and therefore does not receive an NPDES permit, would be immediately subject to enforcement and regulation under the Clean Water Act if it has a discharge which is not subject to the agricultural storm water discharge exemption; EPA and the State do not need to designate such a facility as either a CAFO or as a regulated storm water point source.

With this proposal, EPA intends to give effect to both the agricultural storm water discharge exemption and the other storm water provisions of the Clean Water Act by subjecting to regulation a non-CAFO land applier of AFO and/or CAFO-generated manure and wastewater only if: (1) the discharge is not eligible for the agricultural storm water discharge exemption (which, as discussed above, for AFOs and other non-CAFO land appliers primarily

consists of applying the manure in accordance with proper agricultural practice, including soil test, P threshold, or Phosphorus Index methods); and (2) a conveyance at the land applier's operation has been designated as a regulated storm water point source. EPA emphasizes again that this regulatory approach is relevant only to discharges which are composed entirely of storm water. If it is not due to precipitation, a discharge of manure or wastewater through a point source, such as a ditch, into the waters of the U.S. need not be designated to be subject to enforcement and regulation under the Clean Water Act, as discussed in Section VII.C.6 of today's proposal.

In addition, the Director (or Regional Administrator) could exercise his or her authority to designate such dischargers within a geographic area as significant contributors of pollution to waters of the United States. 40 CFR 122.26(a)(9)(i)(D). The geographic area of concern could be a watershed which is impaired for the pollutants of concern in CAFO waste. To do so, the Director (or Regional Administrator) would need to identify the point source at each land application area or provide a record for presuming that the land application areas in that watershed have point sources, and the designation would only apply to those that do.

As noted above, case-by-case designation of point sources at land application areas which are not under the control of a CAFO owner or operator can already occur under existing regulations. Under section 122.26(a)(1)(v), either the permitting authority or EPA may designate a discharge which he or she determines contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the U.S. EPA is soliciting comment on whether to clarify the term "significant contributor of pollutants" for the purposes of designating a discharge of manure and/or wastewater. If a land applier is applying manure and/or wastewater such that he or she is not eligible for the agricultural storm water discharge exemption and if the receiving waterbody (into which there are storm water discharges associated with manure and/or wastewater) is not meeting water quality standards for a pollutant in the waste (such as phosphorus, nitrogen, dissolved oxygen or fecal coliform), then EPA could propose that, by regulation, such a discharge constitutes a "significant contributor of pollutants." For example, if a land applier is applying manure and/or wastewater at a rate above the rate which qualifies the recipient for the

agricultural storm water discharge exemption, and if, due to precipitation, waste runs off the land application area through a ditch into a navigable water that is impaired due to nutrients, then the permit authority may designate that point source as a regulated storm water point source. The designee would then need to apply for an NPDES permit or risk being subject to enforcement for unpermitted discharges.

EPA solicits comment on the proposed means of ensuring that manure and wastewater from AFOs and CAFOs is used in an environmentally appropriate manner, whether on-site at the CAFO or AFO or off-site outside of the control of the CAFO operator.

E. What are the Terms of an NPDES Permit?

EPA is proposing to include several new requirements in the NPDES permit for CAFOs. See proposed § 122.23(i). As discussed in section VIII on the proposed effluent guidelines, EPA is proposing to require all CAFO operators to develop and implement a Permit Nutrient Plan, which is a site-specific plan for complying with the effluent limitations requirements contained in the NPDES permit. EPA is proposing to require permit authorities to develop special conditions for each individual or general NPDES permit that address: (1) development of the allowable manure application rate; and (2) timing and method for land applying manure. Permits would also include a special condition that clarifies the duty to maintain permit coverage until the facility is properly closed.

NPDES permits are comprised of seven sections: cover page; effluent limitations; monitoring and reporting requirements; record keeping requirements; special conditions; and standard conditions, discussed below.

1. What is a Permit Nutrient Plan (PNP) and What is the difference between USDA's CNMP and EPA's PNP?

EPA is proposing to require all CAFO operators to develop and implement a Permit Nutrient Plan, or PNP. See proposed § 412.31(b)(1)(i)(iv) and § 122.23(k)(4). The PNP is a site-specific plan that describes how the operator intends to meet the effluent discharge limitations and other requirements of the NPDES permit. Because it is the primary planning document for determining appropriate practices at the CAFO, EPA is also proposing to require that it be developed, or reviewed and modified, by a certified planner. The PNP must be developed within three months of submitting either a notice of intent for coverage under an NPDES

general permit, or an application for an NPDES individual permit.

EPA is proposing to include a permit requirement for the CAFO to develop and implement a PNP and modify it when necessary. EPA believes this approach will maintain flexibility for modifications as the agricultural practices of the CAFO change. PNPs are intended to be living documents that are updated as circumstances change. Formal permit modification procedures would not have to be followed every time the PNP was modified.

As described in section VIII of today's proposed revisions to the effluent guidelines, CAFO operators would be required to prepare a PNP that establishes the allowable manure application rate for land applying manure and wastewater, and that documents how the rate was derived. The plan would also address other site-specific conditions that could affect manure and wastewater application. It would also describe sampling techniques to be used in sampling manure and soils, as well as the calibration of manure application equipment, and would describe operational procedures for equipment at the production area.

EPA is proposing to use the term "Permit Nutrient Plan" in today's proposed regulation in order to have a separate and distinct term that applies solely to the subset of activities in a CNMP that are directly connected with the effluent guideline and NPDES permit requirements, which are related to the best available technology currently available. EPA expects that many CAFOs will satisfy the requirement to develop a PNP by developing a Comprehensive Nutrient Management Plan (CNMP). EPA recognizes that creating a new term has the potential to create some initial confusion, and cause concern about overlapping or duplicative requirements. However, EPA believes the term PNP more clearly articulates to the regulated community the important distinctions between the broad requirements of a CNMP and the more specific effluent guideline requirements for a PNP.

EPA invites comment on today's proposal to define PNPs as the subset of elements in the CNMP that are written to meet the effluent guideline requirements. EPA is especially interested in knowing whether PNP is the best term to use to refer to the regulatory components of the CNMP, and whether EPA's explanation of both the differences and relationship between these two terms (PNP and CNMP) is clear and unambiguous.

In the Unified National Strategy for Animal Feeding Operations, EPA and USDA agreed that the development and implementation of CNMPs was the best way to minimize water quality impairment from confinement facilities and land application of manure and wastewater. The Strategy also articulated the expectation that all AFOs would develop and implement CNMPs, although certain facilities (CAFOs) would be required to do so while others (AFOs) would do so on a voluntary basis.

In December 2000, USDA published its Comprehensive Nutrient Management Planning Technical Guidance (referred to here as the "CNMP Guidance"). **Federal Register:** December 8, 2000 (Volume 65, Number 237) Page 76984-76985. The CNMP Guidance is intended for use by NRCS, consultants, landowners/operators, and others that will either be developing or assisting in the development of CNMPs. USDA published the CNMP Guidance to serve only as a technical guidance document, and it does not establish regulatory requirements for local, tribal, State, or Federal programs. Rather, it is intended as a tool to support the conservation planning process, as contained in the NRCS National Planning Procedures Handbook. The objective of the CNMP technical guidance is to identify management activities and conservation practices that will minimize the adverse impacts of animal feeding operations on water quality. The CNMP Guidance provides a list of elements that USDA believes should be considered when developing a CNMP. The strength of the CNMP Guidance is the breadth of conservation practices and management activities that it recommends AFO operators should consider.

Initially, it was EPA's expectation to simply adopt USDA's voluntary program into its NPDES permitting program. However, by intentionally avoiding establishing regulatory requirements and limiting its role to that of technical guidance only, USDA's CNMP Guidance lacks many of the details EPA believes are necessary to ensure discharges of manure and other process wastewater are adequately controlled and nutrients applied to agricultural land in an acceptable manner. In addition, the CNMP Guidance addresses certain elements that address aspects of CAFO operations that EPA will not include as a part of the effluent guidelines and standards.

Nonetheless, it is important to ensure that the regulatory program that would be established by the effluent guidelines and standards and NPDES permit

regulations proposed today is complementary to and leverages the technical expertise of USDA with its CNMP Guidance, rather than present CAFO operators with programs that they might perceive as contradictory. EPA believes this goal will be accomplished by the requirements being proposed today. EPA is proposing that CAFOs, covered by the effluent guideline, develop and implement a PNP that is narrower in scope than USDA's CNMP Guidance, but that establishes specific actions and regulatory requirements.

One of the key differences between the effluent guideline PNP and USDA's CNMP is the scope of elements included in each plan. USDA's CNMP includes certain aspects that EPA does not require CAFO operators to address within the regulatory program. For example, element 4.2.2.1 of USDA's CNMP Guidance ("Animal Outputs—Manure and Wastewater Collection, Handling, Storage, Treatment, and Transfer") tells operators that the CNMP should include insect control activities, disposal of animal medical wastes, and visual improvement considerations. Additionally, Element 4.2.2.1 of the CNMP Guidance ("Evaluation and Treatment of Sites Proposed for Land Application") states the CNMP should identify conservation practices and management activities needed for erosion control and water management. The regulations (and PNP) being proposed today include no such requirement. EPA is not including conservation practices which control erosion as part of a PNP because erosion control is not needed on all CAFO operations and because the costs associated with controlling erosion would add \$150 million dollars to the cost of this proposal. These elements of a CNMP are, however, key components to protect water quality from excessive nutrients and sediments. EPA solicits comment and data on the costs and benefits of controlling erosion and whether erosion control should be a required component of PNPs.

There are a number of elements that are addressed by both the CNMP and PNP. Examples of common elements include soil and manure analyses to determine nutrient content; calibration of application equipment; developing nutrient budgets; and records of Plan implementation. However, USDA's CNMP Guidance is indeed presented only as technical *guidance*. The CNMP Guidance identifies a number of elements that AFOs should consider, but there is no avenue for ensuring that AFOs implement any management practices or achieve a particular performance standard. In contrast,

EPA's proposed PNP would establish requirements for CAFOs that are consistent with the technical guidance published by USDA experts, but that go beyond that guidance by identifying specific management practices that must be implemented.

For example, EPA is proposing the effluent guidelines to require CAFOs to analyze soil samples at least once every three years, and manure and lagoon samples at least annually. 40 CFR 412.37(a)(4)(ii). The CNMP Guidance addresses such analyses, but imposes no mandatory duty to perform such analyses, nor to conform to a particular monitoring frequency. Given the degree to which overflows and catastrophic failures of lagoons have been due to poor operation or maintenance of manure storage structures, EPA is proposing to establish specific requirements under Sections 308 and 402 that would: (1) More precisely monitor lagoon levels to prevent overflows that could be reasonably avoided; (2) require operators to periodically inspect the structural integrity of manure handling and storage structures, and expeditiously take corrective action when warranted; and (3) maintain records to ensure the proper operation and maintenance of manure handling and storage structures. USDA's CNMP Guidance establishes no such requirements.

The regulations proposed today would also require permit authorities to establish more specific requirements for application of manure and wastewater to land, where appropriate, including: how the CAFO operator is to calculate the allowable manure application rate; when it is appropriate to apply manure to frozen, snow covered or saturated land; and facility closure.

a. How are PNPs Developed and What is the Role of Certified Specialists?

Under today's proposed rule, CAFO owners and operators would be required to seek qualified technical assistance for developing PNPs to meet their effluent guidelines and NPDES permit requirements. EPA is proposing that PNPs be developed, or reviewed and modified, by certified planners. See proposed § 412.31(b)(1)(ii).

Since PNPs are a defined subset of activities covered in CNMPs, as described above, owners and operators are expected to take advantage of the same technical assistance that is available for CNMP development, including appropriate Federal agencies, such as the NRCS, State and Tribal agricultural and conservation agency staff, Cooperative Extension Service agents and specialists, Soil and Water Conservation Districts, and Land Grant

Universities. In addition, there are a growing number of non-governmental sources of qualified technical assistance, including integrators, industry associations, and private consultants who are certified to develop CNMPs, as well as the defined subset of activities covered in PNPs. In addition to the help of these experts, a growing number of computer-based tools are either available or under development to facilitate development and implementation of CNMPs, and should be equally useful for PNPs.

Although CAFO owners and operators are ultimately responsible for developing and implementing effective PNPs, EPA is today proposing that PNPs be developed and/or reviewed and approved by a certified specialist. A certified PNP specialist is a person who has a demonstrated capability to develop CNMPs in accordance with applicable USDA and State standards, as well as PNPs that meet the EPA effluent guideline, and is certified by USDA or a USDA-sanctioned organization. Certified specialists include qualified persons who have received certifications through a State or local agency, personnel from NRCS, certification programs recognized as third party vendors of technical assistance, or other programs recognized by States. In addition, USDA is now developing agreements with third-party vendors similar to the 1998 agreement with the Certified Crop Advisors (CCAs) and consistent with NRCS standards and specifications (or State standards if more restrictive). CCAs are expected to be available to provide technical assistance to producers in nutrient management, pest management, and residue management.

The purpose of using certified specialists is to ensure that effective PNPs are developed and/or reviewed and modified by persons who have the requisite knowledge and expertise to ensure that plans fully and effectively address the need for PNPs that meet the minimum effluent guideline requirements in the NPDES permit, and that plans are appropriately tailored to the site-specific needs and conditions at each CAFO.

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 certified specialists for CNMPs, and can be modified relatively easily to include a special module on

how to develop an effective PNP as a defined subset of activities in the CNMP. EPA expects that, as a result of experience gained in the initial round of CAFO permitting under the existing regulations (2000—2005), certification programs will be well equipped to deal with both CNMPs and PNPs by the time today's regulations go into effect and States begin issuing the next round of CAFO permits that reflect these regulations. Thus, PNPs won't be expected to be developed before 2005.

The issue of CNMP preparer requirements was also discussed by the SERs and SBAR Panel during the SBREFA outreach process. (Note that at that time, EPA was still using the term CNMP to apply to regulatory as well as voluntary nutrient management plans.) Several SERs were concerned that requiring the use of a certified planner could significantly increase the cost of plan development, as well as limit the operator's influence over the final product. These SERs felt that, with adequate financial and technical assistance, they could write their own plans and suggested that EPA work to facilitate such an option through expanded training and certification of farmers and provision of a user-friendly computer program to aid in plan development.

The Panel recognized the need for plan preparers to have adequate training to write environmentally sound plans, particularly for large operations. However, the Panel also recognized the potential burden on small entities of having to use certified planners, especially considering the large number of AFOs and the limited number of certified planners currently available. The Panel recommended that EPA work with USDA to explore ways for small entities to minimize costs when developing CNMPs, and indicated that EPA should continue to coordinate with other Federal, State and local agencies in the provision of low-cost CNMP development services and should facilitate operator preparation of plans by providing training, guidance and tools (e.g., computer programs). EPA indicated in the Panel Report that it expected that many operations could become certified through USDA or land grant universities to prepare their own CNMPs.

EPA is requesting comment on the proposal to require that PNPs be developed, or reviewed and modified, by certified planners, and on ways to structure this requirement in order to minimize costs to small operators.

b. Submittal of Permit Nutrient Plan to the Permit Authority.—EPA is proposing to require that applicants for

individual permits and operators of new facilities submitting notices of intent for coverage under a general permit submit a copy of the cover sheet and executive summary of their draft PNP to the permit authority at the time of application or NOI submittal.

§ 122.21(i)(1)(iv) and 122.28(b)(2)(ii). Operators of existing facilities seeking coverage under a general permit must submit a notice of final PNP development within 90 days of seeking coverage, but are not required to provide a copy of the PNP to the Permit Authority unless requested. The reporting requirements, including the notice of PNP development and notice of PNP amendment, are discussed in more detail in section VII.E.3 below.

Initial installation of manure control technologies are significantly less costly compared to retrofitting existing facilities, and early development of a PNP will help to ensure that, when a new facility is being designed, the operator is considering optimal control technologies. In addition, in situations where individual permits are warranted, the public interest demands early review of the PNP, rather than waiting for its availability after the permit has been in effect for some time.

EPA is requesting comment on the proposal to require new facilities seeking coverage under a general permit, as well as applicants for individual permits, to submit a copy of the cover sheet and executive summary of their PNP to the permit authority along with the NOI or permit application. EPA is further requesting comment on whether the entire draft PNP should be submitted along with the NOI or permit application.

EPA is further requesting comment on whether, for individual permits, the PNP, in part or in its entirety, should be part of the public notice and comment process along with the permit.

c. Availability of the Permit Nutrient Plan Information to the Public.—EPA is proposing to require the operator of a permitted CAFO to make a copy of the PNP cover sheet and executive summary available to the public for review. The CAFO operator could choose to make this information directly available to the public in any of several ways, such as: (1) maintaining a copy of these documents at the facility and making them available to the permit authority as publicly viewable documents upon request; (2) maintaining a copy of these documents at the facility and making them available directly to the requestor; (3) placing a copy of them at a publicly accessible site, such as at a public library; or (4) submitting a copy of them to the permit authority. EPA is

proposing that, if the operator has not made the information available by other means, the permit authority would be required, upon request from the public, to obtain a copy of the PNP cover sheet and executive summary and make them available. It is important to ensure that the public has access to this information, which is needed to determine whether a CAFO is complying with its permit, including the land application provisions.

EPA is also considering adding a provision in the final rule that would state that all information in the PNP, not just the cover sheet and executive summary, must be publicly available and cannot be claimed as confidential business information. Some stakeholders have claimed that all or a portion of the PNPs should be entitled to protection as confidential business information (CBI). EPA does not believe that the PNP cover sheet or executive summary would ever contain confidential business information. The information in these two sections of the plan is simply too general ever to be considered as CBI. However, EPA is sensitive to the concerns of CAFOs that there may be information in the remaining, more detailed portions of the PNP that is legitimately proprietary to the CAFOs' businesses and that the permit authorities should therefore protect. We therefore request comments on whether the final rule should require the entire PNP to be publicly available, or alternatively, whether the CAFO should be able to make a confidentiality claim as to the remaining information in the PNP. Any such claim of confidentiality would be governed by EPA's regulations at 40 CFR, Part 2 and relevant statutes.

There would be two bases on which EPA could base a determination that no portion of the Permit Nutrient Plans would be entitled to CBI status. First, CWA Section 402(j) states that "[a] copy of each permit application and each permit issued under this section shall be available to the public." It may be that the PNPs that would be required by today's proposal are properly viewed as a part of the CAFO's NPDES permit. The permits would require each CAFO to develop and carry out a PNP, as specified in the proposed Part 122 regulations. In addition, today's proposed effluent limitations guidelines would specify detailed requirements that PNPs must meet. Failure to develop and properly carry out a PNP would be enforceable under each permit as a permit violation. Therefore, for purposes of Section 402(j), EPA may conclude that PNPs are properly viewed as a part of the permit or permit

application and, accordingly, must be available to the public.

EPA issued a "Class Determination" in 1978 that addresses this issue. See "Class Determination 1-78" (March 22, 1978) (a copy of which is in the public record for today's proposal). This Class Determination addressed how to reconcile Section 402(j) of the Clean Water Act with Section 308 of the Act. Section 308, which authorizes EPA to collect information, states that information obtained under that section shall be available to the public, except upon a showing satisfactory to the Administrator that the information, if made public, would divulge methods or processes entitled to protection as trade secrets. Upon such a showing, the Administrator shall protect that information as confidential. Section 308 makes an exception for "effluent data," which is not entitled to such protection.

This Class Determination concludes that information contained in NPDES permits and permit applications is not entitled to confidential treatment because Section 402(j) mandates disclosure of this information to the public, notwithstanding the fact that it might be trade secrets or commercial or financial information. Referring to the legislative history of the CWA, the Class Determination notes that Congress sought to treat the information in permits and permit applications differently from information obtained under Section 308. It concludes that Congress intended Section 402(j) to be a disclosure mandate in contrast to the basic approach of Section 308, which provides protection for trade secret information. (Class Determination at pp. 2-4.) Therefore, consistent with the Class Determination, if EPA were to conclude that the PNPs are a part of the permit, the entire PNP would be a public document that would not be entitled to confidentiality protection.

A second basis for finding that PNPs must be available to the public would be that, even apart from Section 402(j), the information in PNPs may be "effluent data" and if so, also would not be entitled to protection under Section 308. EPA's regulations define the term "effluent data," among other things, as "[i]nformation necessary to determine the identity, amount, frequency, concentration, temperature, or other characteristics (to the extent related to water quality) of any pollutant which has been discharged by the source (or of any pollutant resulting from any discharge from the source), or any combination of the foregoing." 40 CFR 2.302(a)(2)(i). There is a limited exception for information that is related to research and development activities.

EPA believes that the information in PNP's may fit this definition of "effluent data." The information in PNP's has direct bearing on the amount of pollutants that may be discharged by a CAFO and on characteristics of the pollutants that may be discharged (such as the identity and presence of nutrients) that would be related to water quality.

On the other hand, the Agency could conclude that the information in the PNP is not part of the CAFO's permit. Each permit would indeed require the CAFO to develop and carry out a PNP that is approved by a certified specialist. Nevertheless, the CAFO will be developing the terms of the final PNP, as well as periodic modifications to the PNP, outside of the permitting process. It may be appropriate not to consider the PNP to be part of the permit for purposes of section 402(j). If 402(j)—which states that all information *in the permit* must be publicly available—is therefore not a relevant provision, then whether PNP's could be protected as confidential would be determined under section 308.

Section 308, as noted above, allows information to be protected as CBI where the submitter can demonstrate the trade secret nature of the information to the satisfaction of the Administrator, except that "effluent data" is never confidential. EPA could find that the information in PNP's is *not* "effluent data." That is, EPA could conclude that the information in PNP's primarily concerns operational practices at the facility and does not have enough of a bearing on the characteristics of pollutants in the effluent to be considered "effluent data." Because it would not be "effluent data," the PNP information would not be categorically excluded from being treated as confidential. EPA's regulations at 40 CFR Part 2 specify the procedures for parties to make case-specific claims that information they submit to EPA is confidential and for EPA to evaluate those claims. Consistent with these regulations, each CAFO could claim that the information in its PNP is confidential (except for the cover sheet and executive summary). EPA would evaluate these claims and determine in each case whether the CAFO's CBI claim should be approved or denied. In sum, EPA could adopt final regulations that would require a CAFO's CBI claims for the more detailed information in the remaining parts of the PNP to be decided in each case.

The Agency notes that EPA itself would, of course, always be able to request and review the CAFO's full PNP. The issues raised in this

discussion concern only the availability of these plans to outside parties.

EPA requests comments on all aspects of this proposal, including whether it would be proper to determine that the full PNP must be publicly available under CWA Section 402(j) and under CWA Section 308 as "effluent data." EPA also requests comments on whether the cover sheet and executive summary should always be made available to the public, as proposed, or whether there are elements of the cover sheet or executive summary that might appropriately be claimed as CBI, and not considered to be either part of the permit or "effluent data."

The PNP would be narrower than the CNMP and would contain only requirements that are necessary for purposes of the effluent guideline. A CNMP may contain other elements that go beyond the effluent guideline. EPA is not proposing any separate requirements for CNMPs themselves to be made publicly available and is not proposing any findings as to whether information in a CNMP may be confidential.

2. What are the Effluent Limitations in the Permit?

The effluent limitations section in the permit serves as the primary mechanism for controlling discharges of pollutants to receiving waters. This section describes the specific narrative or numeric limitations that apply to the facility and to land application. It can contain either technology-based effluent limits or water quality-based effluent limits, or both, and can contain additional best management practices, as needed.

a. What Technology Based Effluent Limitations Would be in the Permit? Under the two-tier structure, for CAFOs with 500 AU or more, the effluent guidelines and standards regulations [40 CFR 412] would establish the technology-based effluent limitations to be applied in NPDES permits. Under the three-tier structure, any operation defined as a CAFO would be subject to the revised effluent guidelines. The proposal to revise the effluent guidelines and standards regulation is described in section VIII of today's proposed rule.

Operations with fewer than 500 AU under the two-tier structure, or fewer than 300 AU under the three-tier structure, which have been designated as CAFOs by the permit authority would not be subject to the effluent guidelines and standards. For these CAFOs, the permit writer would use "Best Professional Judgement," or BPJ, to establish, on a case-by-case basis, the

appropriate technology-based requirements. Often, permit writers adopt requirements similar to, or the same as the effluent guidelines requirements.

b. What Water Quality-based Effluent Limitations Would be in the Permit? Section 301(b)(1)(C) of the Clean Water Act requires there to be achieved "any more stringent limitation, including those necessary to meet water quality standards." Therefore, where technology-based effluent limitations are not sufficient to meet water quality standards, the permit writer must develop more stringent water quality-based effluent limits. Under today's proposal, the permit writer must include any more stringent effluent limitations for the waste stream from the production area as necessary to meet water quality standards. If necessary to meet water quality standards, permit writers may consider requiring more stringent BMPs (e.g., liners for lagoons to address a direct hydrologic connection to surface waters; covers for lagoons to prevent rainwater from causing overflows; allowing discharges only from catastrophic storms and not from chronic storms; pollutant limits in the overflow; particular treatments, such as grassed waterways for the overflows discharged; etc.).

If EPA chose to promulgate one of the options discussed in section VII.D.2 above under which the agricultural storm water discharge exemption did not apply to land application areas under the operational control of a permitted CAFO, then the permit writer would be required to establish water quality-based effluent limits where necessary to meet water quality standards. If EPA chose to promulgate the option described in section VII.D.2 above, under which the appropriate rates and practices identified in the effluent guidelines and the NPDES regulations established the scope of the term "agriculture" without additional consideration of water quality impacts or water quality standards, only the limitations and practices required by the effluent guidelines and the NPDES regulations could be required by the permit authority for land application discharges.

c. What Additional Best Management Practices Would be in the Permit? Under § 122.44(k)(4) of the existing NPDES regulations, permit writers may include in permits best management practices "that are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA." Under today's proposal, the permit writer may include BMPs for land application areas in

addition to those required by the effluent guidelines, as necessary to prevent adverse impacts on water quality. As discussed in section VII.D.2 above, EPA is today defining proper agricultural practices required to qualify for the agricultural storm water discharge exemption to include practices necessary to minimize adverse water quality impacts. Therefore, if a permit writer determines that despite the implementation of the BMPs required by the effluent guidelines discharges from a CAFO will have adverse water quality impacts, the permit writer should impose additional BMPs designed to minimize such impacts.

3. What Monitoring and Reporting Requirements are Included in the Permit?

The section of the NPDES permit on monitoring and reporting requirements identifies the specific conditions related to 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 permit authority. This information allows the NPDES permit authority to determine compliance with the permit requirements.

As described in section VIII, today's proposed revisions to the effluent guidelines would require the operator to conduct periodic visual inspection and to maintain all manure storage and handling equipment and structures as well as all runoff management devices. See proposed § 412.33(c). The NPDES permit would also require the permittee to: (1) test and calibrate all manure application equipment annually to ensure that manure is land applied in accordance with the proper application rates established in the NPDES permit; (2) sample manure for nutrient content at least once annually, and up to twice annually if manure is applied more than once or removed to be sent off-site more than once per year; and (3) sample soils for phosphorus once every three years. Today's proposed effluent guidelines would also require the operator to review the PNP annually and amend it if practices change either at the production area or at the land application area, and submit notification to the permit authority. Examples of changes in practice necessitating a PNP amendment include: a substantial increase in animal numbers (e.g., more than 20 percent) which would significantly increase the volume of manure and nutrients produced on the CAFO; a change in the cropping program which would significantly alter land application of

animal manure and wastewater; elimination or addition of fields receiving animal waste application; or changes in animal waste collection, storage facilities, treatment, or land application method.

As discussed in section VII.E.1.c above, CAFO operators would be required to submit their PNPs, as well as any information necessary to determine compliance with their PNPs and other permit requirements, to the permit authority upon request. The CAFO operator could make a copy of the cover sheet and executive summary of the PNP available to the public in any of several ways. Operators of new facilities seeking coverage under a general permit and applicants for individual permits would be required to submit a copy of their draft PNP to the permit authority at the time of NOI submittal or application.

EPA is also proposing to require operators to submit a written notification to the permit authority, signed by the certified planner, that the PNP has been developed or amended, and is being implemented, accompanied by a fact sheet summarizing certain elements of the PNP. See § 412.31(b)(1)(ii). This written notice of PNP availability would serve an important role in verifying that the permittee is complying with one of the requirements of the NPDES permit. EPA is proposing that the PNP notification and fact sheet contain the following information:

- The number and type of animals covered by the plan
- The number of acres to which manure and wastewaters will be applied
- The phosphorus conditions for those fields receiving the manure
- Nutrient content of the manure
- Application schedule and rate
- The quantity to be transferred off-site
- Date PNP completed or amended
- Key implementation milestones

4. What are the Record Keeping Requirements?

The record keeping requirements section of the permit specifies the types of records to be kept on-site at the permitted facility.

Operation and Maintenance of the CAFO. As described in section VIII of today's proposal, EPA is proposing to require operators to maintain records at the facility that document: (1) the visual inspections, findings, and preventive maintenance; (2) the date, rate, location and methods used to apply manure and wastewater to land under the control of the CAFO operators; (3) the transfer of the CAFO-generated manure off-site; (4) the results of annual manure and

wastewater sampling and analyses to determine the nutrient content; and (5) the results of representative soil sampling and analyses conducted at least every three years to determine nutrient content.

Transfer to Off-site Recipients of CAFO Manure. As described in Chapter IV.B and V.B, inappropriate land application of CAFO-generated manure poses a significant risk to water quality. Further, EPA estimates that the majority of CAFO-generated manure is in excess of CAFO's crop needs, and will very likely be transferred off-site. The ultimate success of the CAFO program depends on whether recipients handle manure appropriately, and in a manner that prevents discharge to waters. As discussed fully in section VII.D.4, EPA is not proposing to regulate off-site recipients through CAFO permit requirements, however, EPA believes that the certification and record-keeping requirements described here will help to ensure responsible handling of manure. Thus, EPA is co-proposing additional record keeping requirements under the NPDES program.

Under one co-proposed option, EPA would require that owners or operators of CAFOs obtain from off-site land appliers a certification that, if land applying CAFO-generated manure, they are doing so at proper agricultural rates. In addition, the CAFO owner or operator would be required to maintain records of transfer, including the name of the recipient and quantity transferred, and would be required to provide the recipient with an analysis of the contents of the manure and a brochure describing the recipient's responsibilities for proper management of the manure.. Under another co-proposed option, EPA would not require the certification, but would require the CAFO owner or operator to keep records and provide information.

Certification Option. Under one option, EPA is proposing that CAFOs obtain a certification and that recipients of CAFO-generated manure so certify, pursuant to § 308 of the CWA. Under § 308, EPA has the authority to require the owner or operator of a point source to establish and maintain records and provide any information the Agency reasonably requires. The Agency has documented historic problems associated with over application of CAFO manure and wastewater by both CAFO operators and recipients of CAFO manure and wastewater. Today's proposal would establish effluent limitations designed to prevent discharges due to over application. In order to determine whether or not CAFOs are meeting the effluent

limitations which would be established under today's proposals, EPA believes it is necessary for the Agency to have access to information concerning where a CAFO's excess manure is sent.

Furthermore, in order to determine whether or not the recipients of CAFO manure should be permitted (which may be required if they do not land apply the CAFO manure in accordance with proper agricultural practices and they discharge from a point source, see section VII.D.2), EPA has determined that it will be necessary for such recipients to provide information about their land application methods. Recipients who certify that they are applying manure in accordance with proper agricultural practices as detailed in section VII.D.2 are responding to a request under Section 308 of the CWA. Therefore, a recipient who falsely certifies is subject to all applicable civil and criminal penalties under Section 309 of the CWA.

In some cases, CAFOs give or sell manure to many different recipients, including those taking small quantities, and this requirement could result in an unreasonable burden. EPA is primarily concerned with recipients who receive and dispose of large quantities, presuming that recipients of small quantities pose less risk of inappropriate disposal or over-application. To relieve the paperwork burden, EPA is proposing that CAFOs not be required to obtain certifications from recipients that receive less than twelve tons of manure per year from the CAFO. The CAFO would, however, be required to keep records of transfers to such recipients, as described below.

The Agency believes that it would be reasonable to exempt from the PNP certification requirements recipients who receive small amounts of manure from CAFOs. EPA considered exempting amounts such as a single truckload per day or a single truckload per year. EPA decided that an appropriate exemption would be based on an amount that would be typically used for personal, rather than commercial, use. The exemption in today's proposal regulation is based on the amount of manure that would be appropriately applied to five acres of land, since five acres is at the low end of the amount of land that can be profitably farmed. See, e.g., "The New Organic Grower," Elliott Coleman (1995).

To determine the maximum amount of manure that could be appropriately applied to five acres of land, an average nutrient requirement per acre of cropland and pasture land was computed. Based on typical crops and national average yields, 160 pounds of

nitrogen and 14.8 pounds of phosphorous are required annually per acre. See "Manure Nutrient Relative to the Capacity of Cropland and Pastureland to Assimilate Nutrients," Kellogg et al (USDA, July, 25, 2000). The nutrient content of manure was based on USDA's online software, *Manure Master*, available on the world wide web at <http://www2.ftw.nrcs.usda.gov/ManureMaster/MM21.html>.

The nitrogen content of manure at the time of land application ranges from 1.82 pounds per ton for heifers and dairy calves to 18.46 pounds per ton for hens and pullets. Using the low end rate of 1.82 pounds of nitrogen per ton, 87.4 tons of manure would be needed for a typical acre or 439 tons of manure for five acres in order to achieve the 160 pounds per acre rate. Using the high end rate of 18.46 pounds of nitrogen per ton, 8.66 tons of manure would be needed for a typical acre or 43.3 tons of manure for five acres in order to achieve the 160 pounds per acre rate. Thus, the quantity of manure needed to meet the nitrogen requirements of a five acre plot would range from 43.3 tons to 439 tons, depending on the animal type.

The phosphate content of manure at the time of land application ranges from 1.10 pounds per ton for heifers and dairy calves to 11.23 pounds per ton for turkeys for breeding. Using the high end 11.23 pound per ton rate for phosphorous, only about 1.3 tons would be needed for an average acre, or 6.5 tons for five acres in order to meet the 14.8 pounds of phosphorous required annually for a typical acre of crops. Using the low end 1.1 pound per ton rate for phosphorous, about 13.2 tons would be needed for an average acre, or 66 tons for five acres. Using the phosphate content for broilers of 6.61 pounds per ton is more typical of the phosphate content of manure and would result in 2.23 tons per acre being needed for an average acre, or 11.2 tons for five acres.

Clearly, exempting the high end amount of manure based on nitrogen content could lead to excess application of phosphorous. Regulating based on the most restrictive phosphate requirement could lead to manure not being available for personal use.

The exemption is only an exemption from the requirement that the CAFO obtain a certification. The recipient would remain subject to any requirements of State or federal law to prevent discharge of pollution to waters of the U.S.

EPA is proposing to set the threshold at 12 tons per recipient per year. This is rounding the amount based on typical phosphate content. It also allows one

one-ton pick up load per month, which is consistent with one of the alternative approaches EPA considered. Recipients that receive more than 12 tons would have to certify that it will be properly managed. EPA is interested in comments on alternative thresholds for exempting small quantity transfers by the CAFO from the requirement that CAFOs receive certifications from the recipients.

For CAFO owners or operators who transfer CAFO-generated manure and wastewater to manure haulers who do not land apply the waste, EPA is proposing that the CAFO owner or operator must: (1) obtain the name and address of the recipients, if known; (2) provide the manure hauler with an analysis of the nutrient content of the manure, to be provided to the recipients; and (3) provide the manure hauler with a brochure to be given to the recipients describing the recipient's responsibility to properly manage the land application of the manure to prevent discharge of pollutants to waters of the U.S. The certification form would include the statement,

"I understand that the information is being collected on behalf of the U.S. Environmental Protection Agency or State and that there are penalties for falsely certifying. The permittee is not liable if the recipient violates its certification."

Concern has been expressed that many potential recipients of CAFO manure will choose to forego CAFO manure, and buy commercial fertilizers instead, in order to avoid signing such a certification and being brought under EPA regulation. The result could be that CAFO owners and operators might be unable to find a market for proper disposal, thereby turning the manure into a waste rather than a valuable commodity. EPA requests comment on this concern.

This alternative is potentially protective of the environment because non-CAFO land applicators would be liable for being designated as a point source in the event that there is a discharge from improper land application. EPA's proposed requirements for what constitutes proper agricultural practices, described in VII.D.2 above, would ensure that CAFO-generated manure is properly managed.

No Certification Option. In the second alternative proposal for ensuring proper management of manure that is transferred off-site, EPA is not proposing to require CAFO owners or operators to obtain the certification described above. Rather, CAFO owners or operators would be required to maintain records of transfer, described in the following section.

Concern has been expressed that many potential recipients of CAFO manure will choose to forego CAFO manure, and buy commercial fertilizers instead, in order to avoid signing such a certification and being brought under EPA regulation. The result could be that CAFO owners and operators might be unable to find a market for proper disposal, thereby turning the manure into a waste rather than a valuable commodity.

This alternative is potentially protective of the environment because non-CAFO land applicators would be liable for being designated as a point source in the event that there is a discharge from improper land application. EPA's proposed requirements for what constitutes proper agricultural practices, described in VII.D.2 above, would ensure that CAFO-generated manure is properly managed.

Records of Transfer of Manure Off-site. In both alternative proposals for whether or not to require CAFO owners or operators to obtain certifications from off-site recipients, EPA is proposing to require CAFO operators to maintain records of the off-site transfer of the CAFO-generated manure and wastewater, e.g., when manure is sold or given away for land application on land not under their operational control, to ensure the environmentally acceptable use of the CAFO-generated manure. See § 122.23(i)(5). When CAFO-generated manure is sold or given away to be used for land application, the specific manner of land application does not need to be addressed in the CAFO's PNP. However, to help ensure the environmentally acceptable use of the CAFO-generated manure, the CAFO operator would be required to do the following: See § 122.23(j)(4) and (5).

- Maintain records showing the amount of manure and/or wastewater that leaves the operation;
- Record the name and address of the recipient(s), including the intended recipient(s) of manure and/or wastewater transferred to contract haulers, if known;
- Provide the recipient(s) with representative information on the nutrient content of the manure to be used in determining the appropriate land application rates; and
- Provide the recipient with information provided by the permit authority of his/her responsibility to properly manage the land application of the manure to prevent discharge of pollutants to waters of the U.S.
- [Under one co-proposed option, obtain and retain on-site a certification from each recipient of the CAFO-generated manure and wastewater that

they will do one of the following: (a) land apply in accordance proper agricultural practices as defined in today's proposal; (b) obtain an NPDES permit for discharges resulting from non-agricultural spreading; (c) or utilize it for other than land application purposes.]

EPA proposes to require these records to be retained on-site at the CAFO, and to be submitted to the permit authority upon request.

5. What are the Special Conditions and Standard Conditions in an NPDES Permit?

Standard conditions in an NPDES permit list pre-established conditions that apply to all NPDES permits, as specified in 40 CFR 122.41.

The special conditions in an NPDES permit are used primarily to supplement effluent limitations and ensure compliance with the CWA. EPA is proposing at 40 CFR 122.23(i) to (k) to require permit authorities to develop special conditions that: (a) specify how the permittee is to calculate the allowable manure application rate; (b) specify timing restrictions, if necessary, on land application of manure and wastewater to frozen, snow covered or saturated ground; (c) establish requirements for facility closure; (d) specifying conditions for groundwater with a direct hydrological connection to surface water; (e) require certification for off-site transfer of manure and wastewater (co-proposed with omitting this requirement). Finally, EPA is soliciting comment on whether a special condition should be included regarding erosion control.

a. *Determining Allowable Manure Application Rate.* EPA is proposing that the permit authority be required to include a term in the NPDES permit that establishes the method to be used for determining the allowable manure application rate for applying manure to land under the control of the CAFO operator. See proposed § 122.23(j)(1).

As described in detail in section VIII, three methods are available which may be used to determine the allowable manure application rate for a CAFO. These three methods are: (1) the Phosphorus Index; (2) the Soil Phosphorus Threshold Level; and (3) the Soil Test Phosphorus Level.

EPA is proposing to adopt these three methods from USDA Natural Resource Conservation Service's (NRCS) nutrient management standard (Standard 590). State Departments of Agriculture are developing State nutrient standards which incorporate one of these three methods. EPA is proposing to require that each authorized permit authority

adopt one or more of these three methods as part of the State NPDES program, in consultation with the State Conservationist. The permit would require the permittee to develop the appropriate land application rates in the site-specific PNP based upon the State's adopted method. EPA solicits comment on whether the special conditions in an NPDES permit should require permit authorities to adopt the USDA Natural Resource Conservation Service's (NRCS) Nutrient Management Standard (Standard 590) in its entirety rather than just the portion that applies to determining the allowable manure application rate.

b. *Would Timing Restrictions on Land Application of CAFO-generated Manure be Required?* EPA is proposing to require that the permit writer include in the CAFO's NPDES permit regionally appropriate prohibitions or restrictions on the timing and methods of land application of manure where necessary. See proposed § 122.23(i)(3). The permit writer would develop the restrictions based on a consideration of local crop needs, climate, soil types, slope and other factors.

The permit would prohibit practices that would not serve an agricultural purpose and would have the potential to result in pollutant discharges to waters of the United States. A practice would be considered not to be agricultural if significant quantities of the nutrients in the manure would be unavailable to crops because they would leach, run off or be lost due to erosion before they can be taken up by plants.

EPA considered establishing a national prohibition on applying CAFO-generated manure to frozen, snow covered or saturated ground in today's proposed effluent guidelines. Disposal of manure or wastewater to frozen, snow covered or saturated ground is generally not a beneficial use for agricultural purposes. While such conditions can occur anywhere in the United States, pollutant runoff associated with such practice is a site specific consideration and is dependent on a number of 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 consistently reasonable, and does not impose unnecessary cost on CAFO operators.

While EPA believes that many permit writers will find a prohibition on applying CAFO-generated manure to frozen, snow covered or saturated ground to be reasonably necessary to achieve the effluent limitations and to carry out the purposes and intent of the

CWA, EPA is aware that there are areas where these practices might be allowed provided they are restricted.

Application on frozen ground, for example, may be appropriate in some areas provided there are restrictions on the slope of the ground and proximity to surface water. Many States have already developed such restrictions.

While the proposed regulations would not establish a national technology-based limitation or BMP, EPA is proposing at § 122.23(j)(2) that permit writers consider the need for these limits. Permit authorities would be expected to develop restrictions on timing and method of application that reflect regional considerations, which restrict applications that are not an appropriate agricultural practice and have the potential to result in pollutant discharges to waters of the United States. It is likely that the operators would need to consider means of ensuring adequate storage to hold manure and wastewater for the period which manure may not be applied. EPA estimates that storage periods might range from 45 to 270 days, depending on the region and the proximity to surface water, and to ground water with a direct hydrological connection to surface water. Permit authorities are expected to work with State agricultural departments, USDA's Natural Resource Conservation Service, the EPA Regional office, and other local interests to determine the appropriate standard, and include the standard consistently in all NPDES permits for CAFOs.

EPA's estimate that storage periods would range from 45 days to 270 days is derived using published freeze/frost data from the National Oceanic and Atmospheric Administration, National Center for Disease Control. For the purpose of estimating storage requirements to prevent application to frozen ground, EPA assumed CAFOs could only apply manure between the last spring frost and the first fall frost, called the "freeze free period". With a 90 percent probability, EPA could also use a 28 degree temperature threshold to determine the storage time required, rounded to the nearest 45 day increment. This calculation results in 45 days of storage in the South; 225 days in parts of the Midwest and the Mid-Atlantic; and as high as 270 days storage in the Central region.

EPA is soliciting comment on alternate approaches of prohibiting land application at certain times or using certain methods. For example, EPA might develop a nationally applicable prohibition against applying manure on frozen land that is greater than a certain slope such as 15 percent. EPA is also

interested in whether to prohibit application to saturated soils.

c. *Closure*. EPA is proposing to require permit authorities to require the CAFO operator to maintain permit coverage (e.g., after the facility ceases operation as a CAFO or drops below the size for being defined as a CAFO) until all CAFO-generated manure and wastewater is properly disposed and, therefore, the facility no longer has the potential to discharge. See proposed § 122.23(i)(3). Specifically, the permit writer would need to impose a permit condition requiring the owner or operator to reapply for a permit unless and until the owner or operator can demonstrate that the facility has no potential to discharge wastes generated by the CAFO. This requirement would be included as a special condition in the NPDES permits.

EPA considered several options for ensuring that manure and wastewater from CAFOs is properly disposed after the operation terminates or ceases being a CAFO. Section VII.C.2.g above discusses the options in detail. In this proposal, EPA is also proposing to ensure that permits explicitly address closure requirements. While EPA is today proposing to only require ongoing permit coverage of the former CAFO, permit authorities are encouraged to consider including other conditions such as those discussed in Section VII.C.2.g above.

EPA is soliciting comment on these proposed provisions.

d. *Discharge to Surface Water via a Direct Hydrological Connection with Ground Water*. EPA is proposing requirements to address the serious environmental harms caused by discharges from CAFOs to surface waters via direct hydrologic connection with ground water. As described in section V.B.2.a, studies in Iowa, the Carolinas, and the Delmarva Peninsula have shown that CAFO lagoons do leak, and that leaks from lagoons contaminate ground water and the surface water to which that ground water is hydrologically connected, often severely. EPA believes that it is reasonable to include a requirement to ensure that discharges to surface water via a direct hydrologic connection with ground water do not occur from CAFOs, either by requiring the permit applicant to implement appropriate controls or to provide evidence that no such connection exists at the facility.

Section VII.C.2.J of today's preamble discusses the legal and technical basis for the proposed ground water controls, and provides information on tools and resources available to permit writers to make determinations as to whether the

production area of a CAFO may potentially discharge to surface waters via direct hydrologic connection with ground water.

EPA requests comment on the following proposals.

CAFOs Subject to Effluent Guideline Requirements for Ground Water. EPA is proposing that, for all CAFOs that are subject to an effluent guideline that includes requirements for zero discharge from the production area to surface water via direct hydrologic connection to ground water (all beef and dairy operations, as well as new swine, poultry and veal operations), the permit would require the appropriate controls and monitoring. See proposed 40 CFR 412.33(a)(3), 412.35(a)(3) and 412.45(a)(3). The permittee would be able to avoid the requirements by submitting a hydrologist's report demonstrating, to the satisfaction of the permit authority, that the ground water beneath the production area is not connected to surface water through a direct hydrologic connection.

EPA is also requesting comment on other options for determining which CAFOs must implement appropriate monitoring and controls to prevent discharges from the production area to hydrologically connected groundwater. One option would be for EPA to narrow the rebuttable presumption to areas with topographical characteristics that indicate the presence of ground water that is likely to have a direct hydrologic connection to surface water. For example, the final rule could specify that only CAFOs located in certain areas, such as an area with certain types of lithologic settings (e.g., karst, fractured bedrock, or gravel); or an area defined by the USGS as a HLR1 or HLR9; or an area with a shallow water table; would need to either comply with the groundwater monitoring requirements and appropriate controls in the effluent guideline or provide a hydrologist's statement demonstrating that there is no direct hydrologic connection to surface waters. Another option would be to require States, through a public process, to identify the areas of the State in which there is the potential for such discharges. In those areas, CAFOs subject to an effluent guideline that includes requirements to prevent discharges to surface water via hydrologically connected ground water would again need to either comply with the monitoring requirements and appropriate controls in the guideline or provide a hydrologist's statement demonstrating that there is no hydrologic connection to surface waters.

Requirements for CAFOs Not Subject to Effluent Guidelines Ground Water

Provisions. Certain facilities are not subject to today's revised effluent guideline (412 Subpart C and D) that includes requirements to prevent discharges to surface water via hydrologically connected ground water. Such CAFOs include: (1) Facilities below the effluent guideline applicability threshold that are designated as CAFOs; (2) existing swine, poultry and veal operations; and (3) CAFOs in sectors other than beef, dairy, poultry, swine and veal. For such CAFOs not subject to an effluent guideline that includes ground water requirements, EPA is proposing that the permit writer must assess whether the facility is in an area with topographical characteristics that indicate the presence of ground water that is likely to have a direct hydrologic connection to surface water. For instance, if the facility is in an area with topographical characteristics that indicate the presence of ground water that is likely to have a hydrologic connection to surface water, as discussed above, the permit writer is likely to determine that there is the potential for a discharge to surface water via ground water with a direct hydrologic connection.

For existing swine, poultry, and veal operations, if the permit writer determines that pollutants may be discharged at a level which may cause or contribute to an excursion above any State water quality standard, the permit writer would be required to decide on a case-by-case basis whether effluent limitations (technology-based and water quality-based, as necessary) should be established to address potential discharges to surface water via hydrologically connected ground water. EPA is proposing that a permittee for whom the permit authority has made the above determinations would be required to comply with those conditions, or could avoid having those conditions imposed by providing a hydrologist's statement that the facility does not have a direct hydrologic connection to surface water. 40 CFR 122.23(j)(6) and (k)(5).

For CAFOs not subject to today's revised effluent guidelines, if the permit writer determines that there is likely to be a discharge from the CAFO to surface waters via a direct hydrologic connection, the permit writer must impose technology-based or water quality-based, or both, effluent limitations, as necessary. Again, EPA is proposing that a permittee for whom the permit authority has made the above determinations would be required to comply with those conditions, or could avoid having those conditions imposed by providing a hydrologist's statement

that the facility does not have a direct hydrologic connection to surface water. 40 CFR 122.23(j)(6) and (k)(5).

EPA is soliciting comments on the alternative provisions discussed here. EPA is also requesting comment on the proposal to place the burden on the permittee to establish to the satisfaction of the permitting authority that the ground water beneath the production area is not connected to surface waters through a direct hydrologic connection.

e. Certification for Off-site Recipients of CAFO Manure. EPA is co-proposing either to include the following requirement or to omit it. In the inclusionary proposal, EPA would require permit writers to include a special condition in each permit that requires CAFO owners or operators to transfer manure off-site only to recipients who can certify that they will either: (1) Land apply manure according to proper agricultural practices, as defined for off-site land appliers in today's proposed rule; (2) obtain an NPDES permit for potential discharges; or (3) use the manure for purposes other than land application. EPA proposes to define the term "proper agriculture practice" to mean that the recipient shall determine the nutrient needs of its crops based on realistic crop yields for its area, sample its soil at least once every three years to determine existing nutrient content, and not apply the manure in quantities that exceed the land application rates calculated using either the Phosphorus Index, Phosphorus Threshold, or Soil Test Phosphorus method as specified in 40 CFR 412.13(b)(1)(iv).

EPA is also proposing to allow States to waive this requirement if the recipient is complying with the requirements of a State program that are equivalent to proposed 40 CFR 412.13(b).

f. Erosion Control. EPA is not proposing to specify erosion controls as a necessary element of the PNP, but permit writers should consider whether to add special conditions on a case-by-case basis as appropriate.

As described in previous sections, EPA recognizes that sediment eroding from cropland can have a significant negative impact on surface waters. While EPA realizes that it is not possible to completely prevent all erosion, erosion can be reduced to tolerable rates. In general terms, tolerable soil loss is the maximum rate of soil erosion that will permit indefinite maintenance of soil productivity, *i.e.*, erosion less than or equal to the rate of soil development. The USDA-NRCS uses five levels of erosion tolerance ("T") based on factors

such as soil depth and texture, parent material, productivity, and previous erosion rates. These T levels are equivalent to annual losses of about 1–5 tons/acre/year (2–11 mt/ha/year), with minimum rates for shallow soils with unfavorable subsoils and maximum rates for deep, well-drained productive soils (from Ag Management Measures).

Options for controlling erosion are: (1) Implementation of one of the three NRCS Conservation Practices Standards for Residue Management: No-Till and Strip Till (329A), Mulch Till (329B), or Ridge Till (329C) in the state Field Office Technical Guide; (2) requiring a minimum 30 percent residue cover; (3) achieving soil loss tolerance or "T"; or (4) following the Erosion and Sediment Control Management Measure as found in EPA's draft National Management Measures to Control Nonpoint Source Pollution from Agriculture which is substantially the same as EPA's 1993 Guidance Specifying Management Measure for Sources of Nonpoint Pollution in Coastal Waters.

EPA is requesting public comment on the suitability of requiring erosion control as a special condition of an NPDES permit to protect water quality from sediment eroding from fields where CAFO manure is applied to crops. If erosion control is desirable, EPA is soliciting comment as to which method would be the most cost-efficient.

g. Design Standards for Chronic Rainfall. In this section, EPA is soliciting comments on whether additional regulatory language is needed to clarify when a discharge is considered to be caused by "chronic rainfall." EPA also solicits comment on whether design standards to prevent discharges due to chronic rainfall should be specified in the effluent limitations or as a special condition in the NPDES permit.

CAFOs in the beef and dairy subcategory [412-subpart C] are prohibited from discharging except during a "25-year, 24-hour rainfall event or chronic rainfall" and then only if they meet the criteria in § 412.13(a)(2). Section 412.13(a)(2)(i) allows a discharge caused by such rainfall events only if "(i) The production area is designed and constructed to contain all process wastewaters including the runoff from a 25-year, 24-hour rainfall event; and (ii) the production area is operated in accordance with the requirements of § 412.37(a)."

The term "25-year, 24-hour rainfall event" is clearly defined in 40 CFR 412.01(b). In addition, proposed § 412.37(c)(1)(iv) would require all surface impoundments to have a depth

marker which indicates the design volume and clearly indicates the minimum freeboard necessary to allow for the 25-year, 24-hour rainfall event. A discharge may be caused by a 25-year, 24-hour storm when it occurs despite the fact that the CAFO operator maintained adequate freeboard.

The term "chronic rainfall" has not been specifically defined. Generally, a chronic rainfall event is one that lasts longer than 24 hours and causes a discharge from a system that has been designed, constructed, maintained and operated to contain all process wastewaters plus the runoff from a 25-year, 24-hour rainfall event. Persistent rainfall over a period longer than 24 hours may overwhelm a system designed for the 25-year, 24-hour rainfall event even though such persistent rainfalls may be expected to occur more frequently than every 25 years.

In order for a discharge to be "caused" by chronic rainfall, it would need to be contemporaneous with the rainfall. The discharge could not continue after the event any longer than is necessary. For example, once a flooded lagoon has been drawn down to the level necessary to protect the integrity of the lagoon (which in no case should be below the level of the freeboard necessary for a 25/24-hour storm), the discharge should cease. If the lagoon could not then accept additional waste from the CAFO, no animals that would contribute waste to the lagoon should be brought to the facility until additional capacity can be generated by properly land applying the waste or shipping the waste off-site.

A discharge also would not be considered to be "caused" by the chronic storm if the operator should have foreseen the event in time to properly land apply the waste and thereby have avoided an overflow or the need to apply wastes to saturated grounds. Similarly, a discharge is not considered to be caused by the chronic storm if the operator should have foreseen the event and maintained adequate facilities for managing the waste. Although (in the absence of more specific regulatory requirements) operators would be responsible for foreseeing and planning for chronic rainfall events, they would be liable for discharges during chronic events only where they were not reasonable in their decision regarding what would be adequate capacity.

An approach that would provide more certainty to the operator but place a greater burden on permitting authorities would be for EPA to require permit authorities to specify regionally-specific

minimum free board requirements necessary to contain runoff from foreseeable chronic events. For example, it may be known that, in a given area, the free board necessary to contain the runoff from a 25-year, 24-hour storm will not be sufficient to contain the runoff that typically accumulates during the region's rainy season, especially when it would not be appropriate to draw down the lagoon by land applying wastes during that time. In that case, it may be necessary for the permit writer to specify a greater freeboard requirement that would apply to the CAFO at the beginning of that season. For example, Nebraska requires CAFOs to be able to capture the average rainfall for the three summer months. EPA notes that such additional permit conditions are already required where they are necessary to eliminate potential discharges that would cause or contribute to violations of state water quality standards.

Another approach would be to require the operator to notify the permitting authority as soon as it knows that a discharge will occur or is occurring and to come to an agreement on how long the discharge will occur. This approach has several disadvantages. Because many facilities located in the same area may be experiencing the same problem, permitting authorities may not have the resources to address several simultaneous requests. It is not clear how a disagreement between the operator and permit authority would be resolved. Perhaps most importantly, this approach also does not address the need to foresee and prepare for such events in advance of the event.

EPA solicits comment on all of these approaches for clarifying when a discharge is considered to be caused by "chronic rainfall," and whether technology guidelines are necessary in either section 412 or 122 to address discharges due to chronic rainfall.

F. What Type of NPDES Permit is Appropriate for CAFOs?

NPDES permit authorities can exercise one of two NPDES permitting options for CAFOs: general permits or individual permits. A general NPDES permit is written to cover a category of point sources with similar characteristics for a defined geographic area.

1. What Changes Are Being Made to the General Permit and NOI Provisions?

The majority of CAFOs may appropriately be covered under an NPDES general permit because CAFOs generally involve similar types of operations, require the same kinds of effluent limitations and permit

conditions, and discharge the same types of pollutants. In the past, about 70 percent of permitted CAFOs have been permitted under an NPDES general permit, and EPA expects this trend to continue. General permits offer a cost-effective approach for NPDES permit authorities because they can cover a large number of facilities under a single permit. The geographic scope of a general permit is flexible and can correspond to political or other boundaries, such as watersheds. At the same time, the general permit can also provide the flexibility for the permittee to develop and implement pollution control measures that are tailored to the site-specific circumstances of the permittee. The public has an opportunity for input during key steps in the permit development and implementation process.

EPA is proposing to clarify that CAFOs may obtain permit coverage under a general permit. See proposed § 122.28(a)(2)(iii). Although section 122.28 currently authorizes CAFOs to be regulated using a general permit, some stakeholders have questioned whether CAFOs fall within the current language of that section. Today's proposal would clarify that permit writers may use a general permit to regulate a category of CAFOs that are appropriately regulated under the terms of the general permit.

A complete and timely NOI indicates the operator's intent to abide by all the conditions of the permit, and the NOI fulfills the requirements for an NPDES permit application. The contents of the NOI are specified in the general permit.

The current regulation requires NOIs to include legal name and address of the owner and operator; facility name and address; type of facility or discharges; and the receiving stream(s). EPA is proposing to amend § 122.28(b)(2)(ii) to require, in addition:

- Type and number of animals at the CAFO
- Physical location, including latitude and longitude of the production area
- 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 other entity with substantial operational control of facility
- If a new facility, provide a copy of the draft PNP
- If an existing facility, the status of the development of the PNP
- If an area is determined to have vulnerable ground water (karst, sandy soil, shallow water table, or in a hydrological landscape region 1 (HLR1), submit a hydrologist's statement that the

ground water under the production area of the facility is not hydrologically connected to surface water, if the applicant asserts as such

- Provide a topographic map as described in 40 CFR 122.21(f)(7), showing any ground water aquifers and depth to ground water that may be hydrologically connected to surface water

§ 122.21(f) requires the applicant to submit a topographic map extending one mile beyond the facility's boundary that shows potential discharge points and surface water bodies in the area. EPA is proposing to include a requirement that the operator also identify on the topographic map any ground water aquifers that may be hydrologically connected to surface water, as well as the depth to ground water.

EPA is proposing to require permit authorities to make the NOI and the notification of PNP development or amendment available to the public and other interested parties in a timely manner, updated on a quarterly basis. See proposed § 122.23(j)(2). EPA encourages States to develop and use Internet-based sites as a supplemental means to provide ready public access to CAFO NPDES general permits, facility NOIs, and other information.

EPA will explore ways to adapt the Permit Compliance System, EPA's national wastewater database, so that permit authorities may use it to track CAFO compliance information. This information might include: NPDES permit number; facility name; facility location; latitude and longitude of the production of area; animal type(s); number of animals; the name and address of the contract holder (for contract operations); PNP date of adoption or, where a PNP has not yet been developed, the schedule for developing and implementing the PNP, including interim milestones.

EPA is proposing to clarify that CAFOs may obtain permit coverage under a general permit. See proposed § 122.28(a)(2)(iii), which would expressly add "concentrated animal feeding operations" to the list of sources that are eligible for general permits. In fact, CAFOs are already eligible for general permits under the existing regulations at § 122.28(a)(2), both

because they are storm water point sources (see subsection (a)(2)(i)) and because they are a category of point sources that involve the same or substantially similar types of operations, may be more appropriately controlled under a general permit than under individual permits, and otherwise meet the criteria of subsection (a)(2)(ii). Some stakeholders, however, have questioned whether CAFOs meet these existing criteria for general permit eligibility. Therefore, to remove any such questions among stakeholders, EPA is proposing to expressly add CAFOs to the list of sources that are eligible for general permits. In sum, this proposed change would be for purposes of clarity only; it would effect no substantive change to the regulations.

2. Which CAFOs May Be Subject to Individual Permits?

Although EPA is not proposing to require NPDES individual permits in particular circumstances, the Agency is proposing additional criteria for when general permits may be inappropriate for CAFOs. See proposed § 122.28(b)(3)(i)(G). Under the existing regulation, the public may petition the permit authority when it believes that, based on the criteria in section 122.28(b)(3)(i), that coverage under a general permit is inappropriate. Finally, EPA is proposing to require the permit authority to conduct a public process for determining which criteria, if any, would require a CAFO owner or operator to apply for an individual permit. See proposed § 122.28(b)(3)(i)(G). Permit authorities would be required to conduct this public process and set forth its policy prior to issuing any general permit for CAFOs. Permit authorities would have flexibility as to how to conduct this public process.

Besides requiring a public process to develop criteria for requiring individual permits, the proposed regulation would also add the following 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 permit authority; and

(4) significantly expanding CAFOs. See proposed § 122.28(b)(3)(i)(G)(i)-(iv). Any interested member of the public may petition the Director to require an individual permit for a facility covered by a general permit. Section 122.28(b)(3).

EPA believes these criteria on the availability of general permits for CAFOs are desirable because of keen public interest in participating in the process of issuing permits to CAFOs. The public may participate in notice and comment during the development of general permits, but once issued, public participation regarding facilities submitting notices of intent is limited. On the other hand, the public does have access to notice and comment participation with regard to individual permits.

EPA considered requiring all CAFOs, or all new CAFOs, to obtain an individual permit, but considered this potentially burdensome to permit authorities. Using general permits to cover classes of facilities by type of operation, by jurisdiction, or by geographic boundary such as a watershed, offers positive environmental as well as administrative benefits.

EPA also considered identifying a threshold to establish when exceptionally large facilities would be required to apply for an individual permit, such as 5,000 AU or 10,000 AU, or by defining such a threshold as the largest ten percent or 25 percent of CAFOs within each sector. EPA did not propose this approach because, as shown in table 7-9, it was difficult to establish a consistent basis across sectors for making this determination. While EPA's cost models assume that 30% of operations might obtain individual permits, and thus such thresholds are taken into account in the cost analyses for this proposed regulation, EPA did not believe particular thresholds would be appropriate across all sectors or all states. EPA is interested in comments on whether it should establish a size threshold above which individual permits would be required, recommendations of what the threshold should be, and data to support such recommendations.

TABLE 7-9. POTENTIAL DEFINITION OF "EXCEPTIONALLY LARGE" FACILITIES

Animal sector	5,000 AU	10,000 AU	Top 10% (Est.)		Top 25% (Est.)	
	Head equivalent	Head equivalent	Head	AU	Head	AU
Beef/Heifer	5,000	10,000	11,000	11,000	3,500	3,500

TABLE 7-9. POTENTIAL DEFINITION OF "EXCEPTIONALLY LARGE" FACILITIES—Continued

Animal sector	5,000 AU	10,000 AU	Top 10% (Est.)		Top 25% (Est.)	
	Head equivalent	Head equivalent	Head	AU	Head	AU
Dairy	3,500	7,000	3,800	5,440	2,170	3,100
Veal	5,000	10,000	1,500	1,500	950	950
Swine	12,500	25,000	9,000	3,600	5,000	2,000
Broiler	500,000	1,000,000	150,000	1,500	110,000	1,100
Layer	500,000	1,000,000	500,000	5,000	180,000	1,800
Turkey	275,000	550,000	100,000	1,820	55,000	1,000

Note: Except for beef, these values are interpolations based on best professional judgement.

EPA also considered whether operations that significantly expand should be required to reapply for a permit. Public concern has been expressed as to whether operations that significantly expand should be required to undergo a public process to determine whether new limits are necessitated by the expansion. EPA believes, however, that if the general permit covers operations similar to the newly expanded operation, there would be no basis for requiring an individual permit. In section VIII above, EPA also has explained why it would not be appropriate to classify facilities that expand their production capacities as new sources. If a member of the public believes that the requirements of a proposed general permit are not adequate for CAFOs above a certain size, it should raise that issue when the permit authority proposes the general permit and request that it be limited to certain size operations. As is discussed above, the public could also petition the permit authority if it believes that a specific facility should be covered by an individual permit.

Under existing regulations the permit authority may modify a permit if there are material and substantial alterations to the permitted facility or activity that occur after the permit is issued and justify different permit conditions. 40 CFR 122.62(a)(1). The public would be able to participate in the permit modification process to incorporate the new standards. 40 CFR 123.5(c).

EPA is interested in comment on whether the above procedures are adequate to ensure public participation or whether individual permits should be required for any of the categories of facilities discussed above. Specifically, EPA is interested in comments on whether individual permits should be required for (a) facilities over a certain size threshold, (b) new facilities; (c) facilities that are significantly expanding; (d) facilities that have historical compliance problems; or (e) operations that are located in areas with significant environmental concerns.

3. Demonstrating No Potential to Discharge

As described in section VII.C.2.d above, today's proposal would require all CAFO owners or operators to apply for an NPDES permit, based on a presumption that all CAFOs have a potential to discharge pollutants to waters of the U.S. There would, however, be one exception to this requirement: A CAFO owner or operator would not need to apply for a permit if it received a determination by the permit authority that the CAFO does *not* have a potential to discharge. It would be the CAFO owner's or operator's burden to ask for a "no potential to discharge" determination and to support the request with appropriate data and information. See proposed § 122.23(c) and (e).

The term "no potential to discharge" means that there is no potential for any CAFO manure or wastewaters to be added to waters of the United States from the operation's production or land application areas, without qualification. For example, if a CAFO land applies its manure according to a permit nutrient plan, it may not claim "no potential to discharge" status on the basis that it *would* have runoff, but any runoff would be exempt as agricultural storm water. CAFOs owners or operators should not be able to avoid permitting by claiming that they already meet the land application requirements that would be in a permit—in this case, the requirement of zero discharge from land application areas except for runoff from properly applied manure and wastewater (see today's proposed effluent limitation guidelines). Moreover, today's proposed effluent limitation guidelines would include not only restrictions on the rate of land application but also a set of best management practices to further protect against inadvertent discharges from land applied manure and wastewater (for example, the requirement for 100 foot setbacks, consideration of timing of application, etc.). EPA's intention

would be to require a permit that imposes both types of requirements unless an operation has clearly established the absence of a potential to discharge. A CAFO's claim that it already meets the restrictions on the rate of land application would not ensure, as a permit would, that the CAFO has employed and is continuing to employ these additional management practices.

Instead, EPA proposes to allow "no potential to discharge" status in order to provide relief where there truly is no potential for a CAFO's wastes to reach the waters. This would include, for example, CAFOs that are far from any water body, or those that have closed cycle systems for managing their wastes and that do not land apply their wastes. In particular, EPA believes that the act of land applying its manure and wastewater would, in many cases, be enough by itself to indicate that a CAFO does have a potential to discharge. It would be very difficult, in general, for CAFOs that land apply their wastes to demonstrate that they have no potential to discharge (although conceivably such a showing could be made if the physical features of the site, including lack of proximity to the waters, slope, etc. warrant it).

It is only where there is no potential for a CAFO's wastes to reach the waters that EPA believes it is appropriate not to require a permit. Indeed, where a CAFO has demonstrated that it has no potential to discharge, it no longer qualifies as a point source under the Act (see Section 502(14), which defines "point source" to include conveyances such as CAFOs from which pollutants "are or may be" discharged).

Under today's proposal, the burden of proof to show that there is no potential to discharge would be with the CAFO owner or operator, not the permitting authority. There would be a presumption that the CAFO does have the potential to discharge unless the CAFO owner or operator has rebutted this presumption by showing, to the satisfaction of the permit authority, that it does not.

It is not EPA's intention to allow a broad interpretation of this provision but, rather, to establish that "no potential to discharge" is to be narrowly interpreted and applied by permit authorities. This provision is intended to be a high bar that provides an exemption only to those facilities that can demonstrate to a degree of certainty that they have no potential to discharge to the waters of the U.S.

Today's proposal would specify that an operation that has had a discharge within the past five years cannot receive a determination that it has no potential to discharge. The Agency is not proposing to specify further the exact conditions that would indicate that a facility has no potential to discharge. However, any such demonstration would need to account for all manure generated at the facility, specifying how the design of the animal confinement areas, storage areas, manure and wastewater containment areas, and land application areas eliminates any possibility of discharge to surface waters or to groundwater with a direct hydrological connection to surface water. Further, the CAFO operator must be able to provide assurance that all CAFO-generated manure and wastewater that is transported off-site are transferred to a recipient that provides for environmentally appropriate handling, such as by: (1) land applying according to proper agricultural practices as defined in this regulation; (2) obtaining an NPDES permit for discharges resulting from land application; or (3) having other non-land application uses.

If an owner or operator is able to demonstrate no potential to discharge at the production area, but cannot demonstrate an assurance that manure transported off-site is being appropriately disposed of, the facility would be required to apply for a zero discharge permit that includes the record keeping requirements described in section VII.E. of today's proposal.

EPA requests comment on whether it should include additional specific criteria for determining whether a CAFO has "no potential to discharge," and what those criteria should be. The Agency is concerned that without more specific criteria, this provision could be subject to abuse. Therefore, EPA is seeking comment on whether safeguards are necessary to ensure that only those CAFOs which truly pose no risk to the environment are able to avoid permitting requirements.

The fact that a CAFO owner or operator submits a request for a determination that the facility has no potential to discharge would not change

the deadline to apply for a permit. The CAFO owner or operator would need to apply for a permit according to the date specified in § 122.23(f) unless it receives a no potential to discharge determination before that date. It would be inappropriate, in EPA's view, to allow otherwise—*i.e.*, to postpone the deadline to apply for a permit if the CAFO has not yet received a determination on its "no potential to discharge" request. Under that approach, even CAFOs owners or operators who could not make a serious claim of "no potential to discharge" could apply for such a determination simply as a way of delaying the permitting process, and the process could in fact be delayed if permitting authorities are faced with large numbers of such requests. We recognize that under the approach we are proposing, some CAFOs who really do have no potential to discharge will be forced to file a complete permit application if their permitting authority has not ruled on their request prior to the deadline for the permit application. However, EPA expects there to be few such cases, since we expect relatively few CAFOs to be able to demonstrate no potential to discharge; and in light of the problems of the alternative approach, EPA's proposed approach seems preferable.

It is important to recognize that if a CAFO receives a "no potential to discharge" determination but subsequently does have a discharge, that operation would be in violation of the Clean Water Act for discharging without a permit. The "no potential to discharge" determination would not identify an operation as forever a non-point source. To the contrary, there would be no basis for excluding an operation from the requirements for point sources if it meets the criteria for being a CAFO and has an actual discharge of pollutants to the waters. The operation, upon discharging, would immediately revert to status as a point source.

EPA is requesting comment on whether the Director's "no potential to discharge" determination should be subject to the same types of administrative procedures that are required for the Director's decision to issue or deny a permit. That is, EPA is considering a requirement that, before EPA or the State could issue a final determination that there is no potential to discharge, the public would have the formal right to comment on, and EPA would have the opportunity to object to (in authorized States), the Director's draft determination. These procedures may be appropriate, for example, in light of anticipated public interest in the

Director's determination. Alternatively, EPA requests comment on *not* requiring the Director to follow these procedures for public and EPA input into the Director's decision. EPA could conclude that the types of procedures that apply to permitting decisions are not appropriate here (since the "no potential to discharge" determination is neither the issuance nor denial of a permit), but that the environment is sufficiently protected by the fact that any actual discharge from either the production or land application areas would be a violation of the Clean Water Act. Under this latter interpretation, EPA would not itself follow the types of procedures that apply to permit decisions (such as providing the public with the formal opportunity to submit public comments on the Director's draft decision) and would not require States to follow those procedures; however, States could make those procedures available if they chose, since they would be more stringent than the procedures required by EPA. EPA requests comment on which of these two alternative approaches to adopt in the final rule.

It should be noted that under the three-tier proposal, in some cases owners of operations in the middle tier (300 AU to 1,000 AU) would not need to demonstrate "no potential to discharge" to avoid a permit because they would not be defined as CAFOs in the first instance. That is, if they do not meet any of the conditions under that regulatory option for being defined as a CAFO (insufficient storage and containment to prevent discharge, production area located within 100 feet of waters, evidence of discharge in the last five years, land applying without a PNP, or transporting manure to an off-site recipient without appropriate certification) then they would not be subject to permitting as CAFOs. (They could, however, still be subject to NPDES permitting as other, non-CAFO types of point sources, as discussed elsewhere in this preamble.)

4. NPDES Permit Application Form 2B

EPA is proposing to amend the NPDES permit application form 2B for CAFOs and Aquatic Animal Production Facilities in order to reflect the revisions included in today's proposed rulemaking, and in order to facilitate consideration of the permit application. EPA is proposing to require applicants for individual CAFO permits to submit the following information:

- 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.
 - provide a copy of the draft PNP.
 - whether buffers, setbacks or conservation tillage are implemented to protect water quality.
 - On the topographic map required by Form 1, identify latitude and longitude of the production area, and

identify depth to ground water that may be hydrologically connected to surface water, if any.

See proposed § 122.21(i)(1).

The existing Form 2B currently only requires: whether the application is for a proposed or existing facility; type and number of animals in confinement (open confinement or housed under roof); number of acres for confinement feeding; if there is open confinement, whether a runoff diversion and control system has been constructed and, if so, indicate whether the design basis is for a 10-year, 24-hour storm, a 25-year, 24-

hour storm, or other, including inches; number of acres contributing to drainage; design safety factor; name and official title, phone number, and signature. In addition, § 122.21(f) of the current NPDES regulation requires applicants to submit a topographic map extending one mile beyond the facility's boundary that shows discharge points and surface water bodies in the area.

EPA is proposing to update form 2B and requests comment on what information should be required of applicants for individual permits.

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See the instructions on the reverse.

EPA I.D. NUMBER (copy from Item 1 of Form 1)

DRAFT - 11/00

FORM 2B NPDES	EPA	U.S. ENVIRONMENTAL PROTECTION AGENCY APPLICATION FOR PERMIT TO DISCHARGE WASTEWATER CONCENTRATED ANIMAL FEEDING OPERATIONS AND AQUATIC ANIMAL PRODUCTION FACILITIES <i>Consolidated Permits Program</i>	
I. GENERAL INFORMATION			
A. TYPE OF BUSINESS		B. LEGAL DESCRIPTION OF FACILITY LOCATION	
<input type="checkbox"/> 1. Concentrated Animal Feeding Operation (complete items B, C, D, and section II) <input type="checkbox"/> 2. Concentrated Aquatic Animal Production Facility (complete items B, C, and section III)		<input type="checkbox"/> 1. Existing Facility <input type="checkbox"/> 2. Proposed Facility	
D. FACILITY OWNERSHIP			
1. Does an entity other than the applicant direct the activity of persons working at the facility identified in Form 1 and I.B.?		<input type="checkbox"/> No	<input type="checkbox"/> Yes
2. Does an entity other than the applicant own the animals at the facility identified in Form 1 and I.B.?		<input type="checkbox"/> No	<input type="checkbox"/> Yes
3. Does an entity other than the applicant specify how the animals at the facility identified in I.B. are grown, fed or medicated?		<input type="checkbox"/> No	<input type="checkbox"/> Yes
4. If yes was the answer for questions D1, D2, or D3, what is the name and address of the responsible entity? Responsible Entity Name: _____ Responsible Entity Address: _____			
II. CONCENTRATED ANIMAL FEEDING/OPERATION CHARACTERISTICS			
A. TYPE AND NUMBER OF ANIMALS		B. LAND APPLICATION	
1. TYPE	2. ANIMALS		1. How much manure is generated annually by the facility? _____ tons 2. Is manure generated by the CAFO land applied? <input type="checkbox"/> Yes <input type="checkbox"/> No If Yes, how many acres of land under the control of the applicant are available for applying the CAFOs manure/wastewater? _____ acres 3. Is manure generated by the CAFO transferred to off-site recipients? <input type="checkbox"/> Yes <input type="checkbox"/> No. If yes, what is the estimated quantity transferred annually? _____ tons
	NO. IN OPEN CONFINEMENT	NO. HOUSED UNDER ROOF	
C. TOTAL NUMBER OF ANIMALS CONFINED AT THE FACILITY _____			
D. NUMBER OF ACRES FOR CONFINEMENT FEEDING _____			
E. IF THERE IS OPEN CONFINEMENT, HAS A RUNOFF DIVERSION AND CONTROL SYSTEM BEEN CONSTRUCTED?			
<input type="checkbox"/> Yes (complete Items 1, 2, & 3 below) <input type="checkbox"/> No (go to section IV.)			
1. What is the design basis for the control system? <input type="checkbox"/> a. 10 year, 24-Hour Storm (specify inches _____) <input type="checkbox"/> b. 25 year, 24-Hour Storm (specify inches _____) <input type="checkbox"/> c. Other (specify inches and type _____)			
2. Report the number of acres of contributing drainage. _____ acres.			
3. Report the design safety factor. _____			
F. PERMIT NUTRIENT PLAN (PNP)			
Has a certified PNP been developed and is being implemented for the facility? <input type="checkbox"/> Yes <input type="checkbox"/> No			
If yes, the applicant is to include a copy of the PNP with the application.			
If No, when will the certified PNP be developed and implemented. Date: _____. A draft PNP must be submitted with this application that, at a minimum, demonstrates that there is adequate land available to the CAFO operator to comply with the land application provisions of 40 CFR Part 412 or describes an alternative to land application that is being implemented.			
G. CONSERVATION PRACTICES			
Please check any of the following conservation practices that are being implemented at the facility to control runoff and protect water quality.			
<input type="checkbox"/> Buffers <input type="checkbox"/> Setbacks <input type="checkbox"/> Conservation Tillage			

III. CONCENTRATED AQUATIC ANIMAL PRODUCTION FACILITY CHARACTERISTICS					
A. For each outfall give the maximum daily flow, maximum 30-day flow, and the long-term average flow.			B. Indicate the total number of ponds, raceways, and similar structures in your facility.		
1. Outfall No.	2. Flow (gallons per day)			1. Ponds	2. Raceways
	a. Maximum Daily	b. Maximum 30 Day	c. Long Term Average		3. Other
				C. Provide the name of the receiving water and the source of water used by your facility.	
				1. Receiving Water	2. Water Source
D. List the species of fish or aquatic animals held and fed at your facility. For each species, give the total weight produced by your facility per year in pounds of harvestable weight, and also give the maximum weight present at any one time					
1. Cold Water Species			2. Warm Water Species		
a. Species	b. Harvestable Weight (pounds)		a. Species	b. Harvestable Weight (pounds)	
	(1) Total Yearly	(2) Maximum		(1) Total Yearly	(2) Maximum
E. Report the total pounds of food fed during the calendar month of maximum feeding.			1. Month	2. Pounds of Food	
IV. CERTIFICATION					
<i>I certify under penalty of law that I have personally examined and am familiar with the information submitted in this application and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.</i>					
A. Name and Official Title (print or type)				B. Phone No. (area code and no.)	
C. Signature				D. Date Signed	

INSTRUCTIONS	
<p>General</p> <p>This form must be completed by all applicants who check "yes" to Item II-B in Form 1. Not all animal feeding operations or fish farms are required to obtain NPDES permits. Exclusions are based on size and occurrence of discharge. See the description of these statutory and regulatory exclusions in the General Instructions that accompany Form 1.</p> <p>For aquatic animal production facilities, the size cutoffs are based on whether the species are warm water or cold water, on the production weight per year in harvestable pounds, and on the amount of feeding in pounds of food (<i>for cold water species</i>). Also, facilities which discharge less than 30 days per year, or only during periods of excess runoff (<i>for warm water fish</i>) are not required to have a permit.</p> <p>Refer to the Form 1 instructions to determine where to file this form.</p> <p>Item I-A</p> <p>See the note above and the General Instructions which accompany Form 1 to be sure that your facility is a "concentrated animal feeding operation" (CAFO).</p> <p>Item I-B</p> <p>Use this space to give a complete legal description of your facilities location including name, address, and latitude/longitude.</p> <p>Item I-C</p> <p>Check "proposed" if your facility is not now in operation or does not currently meet the definition of a CAFO in accordance with the information found in the General Instructions that accompany Form 1.</p> <p>Item I-D</p> <p>The applicant must answer questions I.D. 1-3 to provide information concerning whether an entity other than the applicant exercises substantial operational control over the facility. If the answer is yes to any of the questions contained in Item I.D. the name and address of the entity are to be provided by the applicant.</p> <p>Item II</p> <p>Supply all information in item II if you checked (1) in Item I-A.</p> <p>Item II-A</p> <p>Give the maximum number of each type of animal in open confinement or housed under roof (either partially or totally) which are held at your facility for a total of 45 days or more in any 12 month period.</p> <p>Use the following categories for types of animal:</p> <p style="padding-left: 20px;">Mature Dairy Cattle; Veal; Cattle (other than mature dairy or veal); Swine (over 25 kilograms); Swine (less than 25 kilograms); Horses; Sheep or Lambs; Turkeys; Chickens (Laying Hens/Broilers); Ducks.</p> <p>Item II-B</p> <p>Provide the total amount of manure generated annually by the facility. Identify if manure generated by the facility is to be land applied and the number of acres, under the control of the CAFO operator, suitable for application. If the answer to question 3. is yes, provide the estimated annual quantity of manure and wastewater that the applicant plans to transfer off-site.</p> <p>Item II-C</p> <p>Provide the total number of animals confined at the facility.</p> <p>Item II-D</p> <p>Give only the area used for the animal confinement or feeding facility. Do not include any area used for growing or operating feed.</p> <p>Item II-E</p> <p>Check "yes" if any system for collection of runoff has been constructed. Supply the information under (1), (2), and (3) to the best of your knowledge.</p> <p>Item II-F</p> <p>Provide information concerning the status of the development of a certified PNP for the facility. (Note: for new facilities the certified PNP must be included with Form 2B.) In those cases where the certified PNP has not been completed, provide a draft PNP and an estimated completion date. The draft plan must, at a minimum, demonstrate that there is adequate land available to the operator to comply with the land application provisions of 40 CFR Part 412 or describe an alternative to land application that the operator intends to implement.</p>	<p>Item II-G</p> <p>Check any of the identified conservation practices that are being implemented at the facility to control runoff and protect water quality.</p> <p>Item III</p> <p>Supply all information in Item III if you checked (2) in Item I-A.</p> <p>Item III-A</p> <p>Outfalls should be numbered to correspond with the map submitted in Item XI of Form 1. Values given for flow should be representative of your normal operation. The maximum daily flow is the maximum measured flow occurring over a calendar day. The maximum 30-day flow is the average of measured daily flows over the calendar month of highest flow. The long-term average flow is the average of measured daily flows over a calendar year.</p> <p>Item III-B</p> <p>Give the total number of discrete ponds or raceways in your facility. Under "other," give a descriptive name of any structure which is not a pond or a raceway but which results in discharge to waters of the United States.</p> <p>Item III-C</p> <p>Use names for the receiving water and source of water which correspond to the map submitted in Item XI of Form 1.</p> <p>Item III-D</p> <p>The names of fish species should be proper, common, or scientific names as given in special Publication No. 6 of the American Fisheries Society. "A List of Common and Scientific Names of Fishes from the United States and Canada." The values given for total weight produced by your facility per year and the maximum weight present at any one time should be representative of your normal operation.</p> <p>Item III-E</p> <p>The value given for maximum monthly pounds of food should be representative of your normal operation.</p> <p>Item IV</p> <p>The Clean Water Act provides for severe penalties for submitting false information on this application form.</p> <p>Section 309(c)(2) of the Clean Water Act provides that "Any person who knowingly makes any false statement, representation, or certification in any application, . . . shall upon conviction, be punished by a fine of no more than \$10,000 or by imprisonment for not more than six months, or both."</p> <p>Federal regulations require the certification to be signed as follows:</p> <p>A. For corporation, by a principal executive officer of at least the level of vice president;</p> <p>B. For a partnership or sole proprietorship, by a general partner or the proprietor, respectively; or</p> <p>C. For a municipality, State, Federal, or other public facility, by either a principal executive officer or ranking elected official.</p> <p>Paper Reduction Act Notice</p> <p>The Public reporting burden for this collection of information estimated to average 4 hours per response. This estimate includes time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information to the chief, Information Policy Branch (PM-223), U.S. Environmental Protection Agency, 1200 Pennsylvania Ave., NW, Washington, DC 20460, and the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503, marked Attention: Desk Officer for EPA.</p> <p style="text-align: right;">****DRAFT - 11/00****</p>

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It is anticipated that as a result of the requirement that all CAFOs have a duty to apply, there will be a large number of CAFOs applying for NPDES permits.

Some of these operations represent a greater risk to water quality than others. In order for the permit writer to prioritize NPDES permit writing

activities based on the risk to water quality, Section G is being proposed to add to Form 2B as a screening mechanism. Those facilities without

buffers, setbacks, or conservation tillage potentially pose a greater risk to water quality; therefore the permit writer could use this information to develop and issue NPDES permits to these facilities on an expedited basis.

VIII. What Changes to the Feedlot Effluent Limitations Guidelines Are Being Proposed?

A. Expedited Guidelines Approach

EPA has developed today's proposed regulation using an expedited rulemaking process which relies on communication between EPA, the regulated community, and other stakeholders, rather than formal data and information gathering mechanisms. At various stages of information gathering, USDA personnel, representatives of industry and the national trade associations, university researchers, Agricultural Extension agencies, States, and various EPA offices and other stakeholders have presented their ideas, identified advantages and disadvantages to various approaches, and discussed their preferred options.

EPA encourages full public participation in commenting on these proposals.

B. Changes to Effluent Guidelines Applicability

1. Who is Regulated by the Effluent Guidelines?

The existing effluent guidelines regulations for feedlots apply to operations with 1,000 AU and greater. EPA is proposing to establish effluent guidelines requirements for the beef, dairy, swine, chicken and turkey subcategories that would apply to any operations in these subcategories that are defined as a CAFO under either the two-tier or three-tier structure. Also as discussed in detail in Section VII.B.3, EPA is also requesting comment on an option under which the effluent guidelines proposed today would not be applicable to facilities under 1,000 AU. Under this approach, AFOs below this threshold would be permitted based on an alternate set of effluent guidelines, or the best professional judgment of the permit writer. After evaluating public comments EPA may decide to consider this option. At that time EPA would develop and make available for comment an analysis of why it is appropriate to promulgate different effluent guidelines requirements or no effluent guidelines for CAFOs that have between 300 and 1,000 AU as compared to the effluent guidelines for operations with greater than 1,000 AU.

EPA also proposes to establish a new subcategory that applies to the

production of veal cattle. Veal production is included in the beef subcategory in the existing regulation. However, veal production practices and wastewater and manure handling are very different from the practices used at beef feedlots; therefore, EPA proposes to establish a separate subcategory for veal.

Under the three-tier structure the proposed effluent guidelines requirements for the beef, dairy, swine, veal and poultry subcategories will apply to all operations defined as CAFOs by today's proposal having at least as many animals as listed below.

200 mature dairy cattle (whether milked or dry);
300 veal;
300 cattle other than mature dairy cattle or veal;
750 swine weighing over 55 pounds;
3,000 swine weighing 55 pounds or less;
16,500 turkeys; or
30,000 chickens.

Under the two-tier structure, the proposed requirements for the beef, dairy, swine, veal and poultry subcategories will apply to all operations defined as CAFOs by today's proposal having at least as many animals as listed below.

350 mature dairy cattle (whether milked or dry);
500 veal;
500 cattle other than mature dairy cattle or veal;
1,250 swine weighing over 55 pounds;
5,000 swine weighing 55 pounds or less;
27,500 turkeys; or
50,000 chickens.

EPA is proposing to apply the Effluent Guidelines requirements for the beef, dairy, veal, swine, chicken and turkey subcategories, to all operations in these subcategories that are defined as CAFOs under either of today's proposed permitting scenarios. Operations designated as CAFOs are not subject to the proposed effluent guidelines.

EPA is proposing to rename the Effluent Guidelines Regulations, which is entitled Feedlots Point Source Category. Today's proposal changes the name to the Effluent Guidelines Regulation for the CAFOs Point Source Category. EPA is proposing this change for consistency and to avoid confusion between who is defined as a CAFO under Part 122 and whether the Effluent Guidelines apply to the operation.

EPA is not proposing to revise the Effluent Guidelines requirements or the applicability for the horses, sheep and lambs and ducks subcategories even though the definition of CAFO for these subcategories is changing as described previously in Section VII. These sectors have not undergone the same level of

growth and consolidation that the other livestock sectors have experienced in the past 25 years. In 1992, an estimated 260 farms in these sectors were potentially CAFOs based on size, and relatively few of these operations were expected to maintain horses or sheep in confinement. Finally, the CAFOs in these sectors have not been identified as significant contributors of wastewater pollutants that result in water quality impairment.

EPA has evaluated the technology options described in this section and evaluated the economic achievability for these technologies for all operations with at least as many animals listed above for both the two-tier and three-tier NPDES structures. The technology requirements for operations defined as CAFOs under the two-tier structure are the same requirements for operations defined as CAFOs under the three-tier structure. *Therefore for the purpose of simplifying this discussion and emphasizing the differences in technology requirements for the various technology options, the following discussion will not distinguish between the two CAFO definition scenarios.* For more discussion of the costs and differences in costs between the different CAFO definition scenarios, refer to Section X of this preamble or the EA. For discussion of the benefits achieved for the different technology options and scenarios, refer to Section XI of this preamble.

EPA proposes to make the Effluent Guidelines and standards applicable to those operations that are defined as CAFOs as described previously under Section VII. EPA is not proposing to apply the Effluent Guidelines to those operations that fall below the proposed thresholds but are still designated as CAFOs. As described in Section VII, EPA anticipates that few AFOs will be designated as CAFOs and that these operations will generally be designated due to site-specific conditions. Examples of these conditions could include, not capturing barnyard runoff which runs directly into the stream, or siting open stockpiles of manure inappropriately. EPA believes that establishing national technology based requirements for designated CAFOs is not efficient or appropriate because historically a small number of facilities has been designated and facilities which are designated in the future will be designated for a wide variety of reasons. EPA believes that a permit will best control pollutant discharges from those operations if it is based on the permit writer's best professional judgment and is tailored to address the specific

problems which caused the facility to be designated.

EPA is proposing to make substantial changes to the applicability for chickens, mixed animal operations and immature animals as described below.

Chickens. The current regulations apply to chicken operations with liquid manure handling systems or continuous flow watering systems. Unlimited continuous flow watering systems have been replaced by more efficient systems for providing drinking water to the birds. Consequently, many state permitting authorities and members of the regulated community contend that the existing effluent guidelines do not apply to most broiler and laying hen operations, despite the fact that chicken production poses risks to surface water and groundwater quality from improper storage of dry manure, and improper land application. EPA is proposing to clarify the effluent guidelines to ensure coverage of broiler and laying hen operations with dry manure handling. The proposed applicability is identical to the definition of chicken CAFOs described in Section VII.C.2.f. EPA is thus proposing to establish effluent guidelines for chicken operations that use dry manure handling systems regardless of the type of watering system or manure handling system used. EPA is using the term chicken in the regulation to include laying hens, pullets, broilers and other meat type chickens. See Section VII for more details on the proposed applicability threshold for chickens.

Mixed Animal Types. Consistent with the proposed changes to the definition of CAFO as described in Section VII.C.2.b, EPA is proposing to eliminate the calculation in the existing regulation that apply to mixed animals operations.

Immature Animals. EPA is proposing to apply technology based standards to swine nurseries and to operations that confine immature dairy cows or heifers apart from the dairy. EPA currently applies technology based standards to operations based on numbers of swine each weighing over 55 pounds. Modern swine production has a phase of production called a nursery that only confines swine weighing under 55 pounds. These types of operations are currently excluded from the technology based standards, but are increasing in both number and size. Therefore, EPA proposes to establish technology based standards to operations confining immature pigs. Under the two-tier structure EPA proposes to establish a threshold of 5,000 immature pigs or pigs weighing 55 pounds or less. Under the proposed three-tier structure operations that confine between 3,000 and 10,000

immature pigs could be defined as CAFOs and all operations with more than 10,000 immature pigs would be CAFOs. EPA also proposes to establish requirements for immature heifers when they are confined apart from the dairy, at either stand alone heifer operations similar in management to beef feedlots, or at cattle feedlots. Therefore EPA proposes to include heifer confinement off-site from the dairy under the beef feedlot subcategory, and today's proposed technology standards for beef feedlots would apply to those stand alone heifer operations defined as CAFOs. Also any feedlot that confines heifers along with cattle for slaughter is subject to the beef feedlot requirements.

EPA is proposing to establish a new subcategory for the effluent guidelines regulations which applies to veal operations. The existing regulation includes veal production in the beef cattle subcategory. EPA is proposing to create a distinct subcategory for veal operations because these operations use different production practices than other operations in the beef subcategory however, we are proposing to retain the sized threshold that pertained to veal while included in the beef subcategory. Veal operations maintain their animals in confinement housing as opposed to open outdoor lots as most beef feedlots operate. They also manage their manure very differently than typical operations in the beef cattle subcategory. Due in large part to the diet the animals are fed, the manure has a lower solids content and is handled through liquid manure handling systems, such as lagoons, whereas beef feedlots use dry manure handling systems and only collect stormwater runoff in retention ponds. EPA is proposing to define a veal CAFO as any veal operation which confines 300 veal calves or greater under the three-tier structure, or 500 veal calves or greater under two-tier structure.

C. Changes to Effluent Limitations and Standards

EPA is today proposing to revise BAT and new source performance standards for the beef, dairy, veal, swine and poultry subcategories. EPA is proposing to establish technology-based limitations on land application of manure to lands owned or operated by the CAFO, maintain the zero discharge standard and establish management practices at the production area.

1. Current Requirements

The existing regulations, which apply to operations with 1,000 AU or greater, require zero discharge of wastewater pollutants from the production area except when rainfall events, either

chronic or catastrophic cause an overflow of process wastewater from a facility designed, constructed and operated to contain all process generated wastewaters plus runoff from a 10-year, 24-hour event under the BPT requirements and a 25-year, 24-hour event under the BAT and NSPS requirements. In other words, wastewater and wastewater pollutants are allowed to be discharged as the result of a chronic or catastrophic rainfall event so long as the operation has designed, constructed and operated a manure storage and/or runoff collection system to contain all process generated wastewater, including the runoff from a specific rainfall event. The effluent guidelines do not set discharge limitations on the pollutants in the overflow.

2. Authority to Establish Requirements Based on Best Management Practices

The regulations proposed today establish a zero discharge limitation and include provisions requiring CAFOs to implement best management practices (BMPs) to prevent or otherwise contain CAFO waste to meet that limitation at the production area. The regulations also establish non-numeric effluent limitations in the form of other BMPs when CAFO waste is applied to land under the control of the CAFO owner or operator. For toxic pollutants of concern in CAFO waste, specifically cadmium, copper, lead, nickel, zinc and arsenic, EPA is authorized to establish BMPs for those pollutants under CWA section 304(e). EPA also expects reductions in conventional and nonconventional water pollutants as a result of BMPs. To the extent these pollutants are in the waste streams subject to 304(e), EPA has authority under that section to regulate them. EPA also has independent authority under CWA sections 402(a) and 501(a) and 40 CFR 122.44(k) to require CAFOs to implement BMPs for pollutants not subject to section 304(e). In addition, EPA has authority to establish non-numeric effluent limitations guidelines, such as the BMPs proposed today, when it is infeasible to establish numeric effluent limits. Finally, EPA is authorized to impose the BMP monitoring requirements under section 308(a).

Production Area. EPA has determined that the BMPs for the production area are necessary because the requirement of zero discharge has historically not been attained. As described in Section V, of this preamble, there are numerous reports of discharges from CAFOs that are unrelated to storm events which would be less likely to occur if the

proposed BMPs described below were required.

Section 304(e) provides that “[t]he Administrator, after consultation with appropriate Federal and State agencies and other interested persons, may publish regulations, supplemental to any effluent limitations specified under (b) and (c) of this section for a class or category of point sources, for any specific pollutant which the Administrator is charged with a duty to regulate as a toxic or hazardous pollutant under section 1317(a)(1) or 1321 of this title, to control plant site runoff, spillage or leaks, sludge or waste disposal, and drainage from raw material storage which the Administrator determines are associated with or ancillary to industrial manufacturing or treatment process within such class or category of point sources and may contribute significant amounts of such pollutants to navigable waters.” § 304(e). There are studies showing the presence of a number of listed metals in animal manure.

Numerous sources such as the American Society of Agricultural Engineers, and Universities such as North Carolina State University have acknowledged the presence of metals in manure. Metals are present in the manure because they are added or present in the animal feed. EPA has estimated metal loadings being applied to land before and after this regulation would take effect. Although the concentration of metals present in untreated manure are less than the limits for metals established in EPA’s biosolids regulations (40 CFR Part 503), EPA still anticipates that there would be a substantial reduction in pollutant loadings reaching the edge of the field through use of the land application practices included in today’s proposal. See the Development Document for more discussion.

EPA’s authority to require these BMPs does not require a determination that the toxics present in CAFO waste are significant. The federal courts have held that EPA has extensive authority to carry out its duties under the Clean Water Act:

EPA is not limited by statute to the task of establishing effluent standards and issuing permits, but is empowered by section 501(a) of the Act to prescribe regulations necessary to carry out its functions under the Act. 33 U.S.C. § 1361(a). It is also clear that permissible conditions set forth in NPDES permits are not limited to establishing limits on effluent discharge. To the contrary, Congress has seen fit to empower EPA to prescribe as wide a range of permit conditions as the agency deems appropriate in order to assure

compliance with applicable effluent limits. 33 U.S.C. § 1342(a)(2); *see also id.* § 1314(e). *NRDC v. EPA*, 822 F.2d 104, 122 (D.C. Cir. 1987).

This authority operates independent of section 304(e). EPA’s authority under section 402(a)(2) to establish NPDES permit conditions, including BMPs, for any pollutant when such conditions are necessary to carry out the provisions of the statute has been further implemented through regulations at 40 CFR 122.44(k). Although a requirement to establish and implement BMPs of the type proposed in this regulation could be imposed on a case-by-case basis, EPA has decided to promulgate this requirement on a categorical basis for those facilities which are CAFOs by definition. In light of the more than twenty years of experience with the regulation of CAFOs and their failure to achieve the zero discharge limit originally promulgated, EPA has determined that certain management practices are necessary to ensure that the zero discharge limit is actually met. The stated goal of the Clean Water Act is to eliminate the discharge of pollutants into the Nation’s waters. CWA section 101(a)(1). EPA has determined that these BMPs, by preventing or controlling overflows, leaks or intentional diversions, are an important step toward that goal.

Finally, EPA has authority to impose monitoring and recordkeeping requirements under section 308 of the Act. As described below EPA is proposing to require that CAFOs periodically sample their manure and soils to analyze for nutrient content. This is necessary to both determine what is the appropriate rate to land apply manure and to ensure that the application rate is appropriate. The proposed rule would also require CAFOs to conduct routine inspections around the production area to ensure that automated watering lines are functioning properly, and to ensure that the manure level for liquid systems is not threatening a potential discharge. The CAFO would also maintain records that document manure application, including equipment calibration, volume or amount of manure applied, acreage receiving manure, application rate, weather conditions and timing of manure application, application method, crops grown and crop yields. These records will provide documentation that the manure was applied in accordance with the PNP and has not resulted in a discharge of pollutants in excess of the agricultural use. EPA has determined that these practices are necessary in order to determine whether an owner or operator

of a CAFO is complying with the effluent limitation. Establishment and maintenance of records, reporting, and the installation, use and maintenance of monitoring equipment are all requirements EPA has the authority to impose. 33 U.S.C. § 1318(a).

Land Application Areas. For the land application areas of a CAFO, EPA is proposing a nonnumeric effluent limitation consisting of best management practices. The D.C. Circuit has concluded that “[w]hen numerical effluent limitations are infeasible, EPA may issue permits with conditions designed to reduce the level of effluent discharges to acceptable levels.” *NRDC v. Costle*, 568 F.2d 1369, 1380 (D.C. Cir. 1977); 40 CFR 122.44(k)(3). EPA has determined that it is infeasible to establish a numeric effluent limitation for discharges of land applied CAFO waste and has also determined that the proposed BMPs are the appropriate ones to reduce the level of discharge from land application areas.

The proposed BMPs constitute the effluent limitation for one wastestream from CAFOs. The statutory and regulatory definition of “effluent limitation” is very broad—“any restriction” imposed by the permitting authority on quantities, discharge rates and concentrations of a pollutant discharged into a water of the United States. Clean Water Act § 502(11), 40 CFR 122.2. Neither definition requires an effluent limitation to be expressed as a numeric limit. Moreover, nowhere in the CWA does the term “numeric effluent limitation” even appear and the courts have upheld non-numeric restrictions promulgated by EPA as effluent limitations. *See NRDC v. EPA*, 656 F.2d 768, 776 (D.C. Cir. 1981) (holding that a regulation which allows municipalities to apply for a variance from the normal requirements of secondary sewage treatment is an “effluent limitation” for purposes of review under § 509(b): “[W]hile the regulations do not contain specific number limitations in all cases, their purpose is to prescribe in technical terms what the Agency will require of section 1311(h) permit applicants.”). Thus, the statutory definition of “effluent limitation” is not limited to a single type of restriction, but rather contemplates a range of restrictions that may be used as appropriate. Likewise, the legislative history does not indicate that Congress envisioned a single specific type of effluent limitation to be applied in all circumstances. Therefore, EPA has a large degree of discretion in interpreting the term “effluent limitation,” and determining whether an effluent limitation must be expressed

as a numeric standard. EPA has defined BMPs as "schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States." 40 CFR 122.2. A BMP may take any number of forms, depending upon the problem to be addressed. Because a BMP must, by definition, "prevent or reduce the pollution of waters of the United States," the practices and prohibitions a BMP embodies represent restrictions consistent with the definition of an effluent limitation set out in CWA § 502(11).

Effluent limitations in the form of BMPs are particularly suited to the regulation of CAFOs. The regulation of CAFOs often consists of the regulation of discharges associated with 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 varies 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 would be required to apply their manure and wastewater to land in a manner and rate that represents agricultural use. 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 to provide the nutrient benefits without causing excessive pollutant discharge will vary 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 (especially phosphorus), and the amount of other nutrient sources to be applied. For these reasons, EPA has determined that establishing a numeric effluent limitation guideline is infeasible.

EPA has determined that the various BMPs specified in today's proposed regulation represent the minimum elements of an effective BMP program. By codifying them into a regulation of general applicability, EPA intends to promote expeditious implementation of a BMP program and to ensure uniform and fair application of the baseline requirements. EPA is proposing only those BMPs which are appropriate on a nationwide basis, while giving both

States and permittees the flexibility to determine the appropriate practices at a local level to achieve the effluent limitations. The BMP's (described below) that are included in the proposed technology options are necessary to ensure that manure and wastewater are utilized for their nutrient content in accordance with agricultural requirements for producing crops or pastures. EPA also believes that the proposed regulations represent an appropriate and efficient use of its technical expertise and resources that, when exercised at the national level, relieves state permit writers of the burden of implementing this aspect of the Clean Water Act on a case-by-case basis.

3. Best Practicable Control Technology Limitations Currently Available (BPT)

EPA is proposing to establish BPT limitations for the beef, dairy, swine, veal chicken and turkey subcategories. There are BPT limitations in the existing regulations which apply to CAFOs with 1,000 AU or more in the beef, dairy swine and turkey subcategories. BPT requires that these operations achieve zero discharge of process wastewater from the production area except in the event of a 10-year, 24-hour storm event. EPA is proposing to revise this BPT requirement and to expand the applicability of BPT to all operations defined as CAFOs in these subcategories including CAFOs with fewer than 1,000 AU.

The Clean Water Act requires that BPT limitations reflect the consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such applications. EPA considered two options as the basis for BPT limitations.

Option 1. This option would require zero discharge from a facility designed, maintained and operated to hold the waste and wastewater, including storm water, from runoff plus the 25-year 24-hour storm event. Both this option and Option 2 would add record keeping requirements and practices that ensure this zero discharge standard is met. As described in Section V there are numerous reports of operations discharging pollutants from the production area during dry weather. The reason for these discharges varies from intentional discharge to poor maintenance of the manure storage area or confinement area. EPA's cost models reflect the different precipitation and climatic factors that affect an operations ability to meet this requirement; see Section X and the Development Document for further details.

Option 1 would require weekly inspection to ensure that any storm water diversions at the animal confinement and manure storage areas are free from debris, and daily inspections of the automated systems providing water to the animals to ensure they are not leaking or spilling. The manure storage or treatment facility would have to be inspected weekly to ensure structural integrity. For liquid impoundments, the berms would need to be inspected for leaking, seepage, erosion and other signs of structural weakness. The proposal requires that records of these inspections would be maintained on-site, as well as records documenting any problems noted and corrective actions taken. EPA believes these inspections are necessary to ensure proper maintenance of the production area and prevent discharges apart from those associated with a storm event from a catastrophic or chronic storm.

Liquid impoundments (e.g., lagoons, ponds and tanks) that are open and capture precipitation would be 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 storm event. The depth of the impoundment would have to be noted during each week's inspection and when the depth of manure and wastewater in the impoundment exceeds this maximum depth, the operation would be required to notify the Permit Authority and inform him or her of the action will be taken to address this exceedance. Closed or covered liquid impoundments must also have depth markers installed, with the depth of the impoundment noted during each week's inspection. In all cases, this liquid may be land applied only if done in accordance with the permit nutrient plan (PNP) described below. Without such a depth marker, a CAFO operator may fill the lagoons such that even a storm less than a 25-year, 24-hour storm causes the lagoon to overflow, contrary to the discharge limit proposed by the BPT requirements.

An alternative technology for monitoring lagoon and impoundment levels is remote sensors which monitor liquid levels in lagoons or impoundments. This sensor technology can be used to monitor changes in liquid levels, either rising or dropping levels, when the level is changing rapidly can trigger an alarm. These sensors can also trigger an alarm 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 permit authority. The advantages of this type of system is the real time warning it can provide the CAFO owner or operator that his lagoon or impoundment is in danger of overflowing. It can provide the CAFO operator an opportunity to better manage their operations and prevent catastrophic failures. These sensors are more expensive than depth markers; however, the added assurance they provide in preventing catastrophic failures may make them attractive to some operations.

Option 1 would require operations to handle dead animals in ways that prevent contributing pollutants to waters of the U.S. EPA proposes to prohibit any disposal of dead animals in any liquid impoundments or lagoons. The majority of operations have mortality handling practices that prevent contamination of surface water. These practices include transferring mortality to a rendering facility, burial in properly sited lined pits, and composting.

Option 1 also would establish requirements to ensure the proper land application of manure and other process wastes and wastewaters. Under Option 1 land application of manure and wastewater to land owned or operated by the CAFO would have to be performed in accordance with a PNP that establishes application rates for manure and wastewater based on the nitrogen requirements for the crop. EPA believes that application of manure and wastewater in excess of the crop's nitrogen requirements would increase the pollutant runoff from fields, because the crop would not need this nitrogen, increasing the likelihood of it being released to the environment.

In addition, Option 1 includes a requirement that manure be sampled at least once per year and analyzed for its nutrient content including nitrogen, phosphorus and potassium. EPA believes that annual sampling of manure is the minimum frequency to provide the necessary nutrient content on which to establish the appropriate rate. 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.

The manure application rate established in the PNP would have to be based on the following factors: (1) the

nitrogen requirement of the crop to be grown based on the agricultural extension or land grant university recommendation for 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 same crop at nearby farms or county records. Once the nitrogen requirement for the crop is established the manure application rate would be 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 would be based on the nitrogen content in the manure and should also account for application methods, such as incorporation, and other site specific practices.

The CAFO would have to maintain the PNP on-site, along with records of the application of manure and wastewater including: (1) the amount of manure applied to each field; (2) the nutrient content of manure; (3) the amount and type of commercial fertilizer and other nutrient sources applied; and (4) crop yields obtained. Records must also indicate when manure was applied, application method and weather conditions at the time of application.

While Option 1 would require manure to be sampled annually, it would not require soil sampling and analysis for the nitrogen content in the soil. Nitrogen is present in the soil in different forms and depending on the form the nitrogen will have different potential to move from the field. Nitrogen is present in an organic form from to the decay of proteins and urea, or from other organic compounds that result from decaying plant material or organic fertilizers such as manure or biosolids. These organic compounds are broken down by soil bacteria to inorganic forms of nitrogen such as nitrate and ammonia. Inorganic nitrogen or urea may be applied to crop or pasture land as commercial fertilizer. Inorganic nitrogen is the form taken up by the plant. It is also more soluble and readily volatile, and can leave the field through runoff or emissions. Nitrogen can also be added to the soil primarily through cultivation of legumes which will "fix" nitrogen in the soil. At all times nitrogen is cycling through the soil, water, and air, and does not become adsorbed or built up in the soil

in the way that phosphorus does, as discussed under Option 2. Thus, EPA is not proposing to require soil sampling for nitrogen. EPA would, however, require that, in developing the appropriate application rate for nitrogen, any soil residue of nitrogen resulting from previous contributions by organic fertilizers, crop residue or legume crops should be taken into account when determining the appropriate nitrogen application rate. State Agricultural Departments and Land Grant Universities have developed methods for accounting for residual nitrogen contributed from legume crops, crop residue and organic fertilizers.

Option 1 would also prohibit application of manure and wastewater within 100 feet of surface waters, tile drain inlets, sinkholes and agricultural drainage wells. EPA strongly encourages CAFOs to construct vegetated buffers, however, Option 1 only prohibits applying manure within 100 feet of surface water and would not require CAFOs to take crop land out of production to construct vegetated buffers. CAFOs may continue to use land within 100 feet of surface water to grow crops. Under Option 1, EPA included costs for facilities to construct minimal storage, typically three to six months, to comply with the manure application rates developed in the PNP. EPA included these costs because data indicate pathogen concentrations in surface waters adjacent to land receiving manure are often not significantly different from pathogen levels in surface waters near lands not receiving manure when the manure has been stored and aged prior to land application. EPA believes the 100 foot setback, in conjunction with proper manure application, will minimize the potential runoff of pathogens, hormones such as estrogen, and metals and reduce the nutrient and sediment runoff.

EPA is aware of concerns that the presence of tile drain inlets, sinkholes and agricultural drainage wells may be widespread in some parts of the country. This could effectively preclude manure based fertilization of large areas of crop land. EPA requests comment on the presence of such features in crop land and the extent to which a 100 foot setback around such features would interfere with land application of manure. EPA also requests comment on how it might revise the setback requirement to address such concerns and still adequately protect water quality.

EPA analysis shows application rates are the single most effective means of reducing runoff. Nevertheless, no combination of best management

practices can prevent pollutants from land application from reaching surface waters in all instances; vegetated buffers provide an extra level of protection. Buffers are not designed to reduce pollutants on their own; proper land application and buffers work in tandem to reduce pollutants from reaching surface waters. Data on the effectiveness of vegetated buffers indicate that a 35 to 66 foot vegetated buffer (depending primarily on slope) achieves the most cost-effective removal of sediment and pollutants from surface runoff. However, EPA chose not to propose requiring operations to take land out of production and construct a vegetated buffer because a buffer may not be the most cost-effective application to control erosion in all cases. There are a variety of field practices that should be considered for the control of erosion. EPA encourages CAFOs to obtain and implement a conservation management plan to minimize soil losses, and also to reduce losses of pollutant bound to the soils.

Today's proposal requires a greater setback distance than the optimum vegetated buffer distance. Since EPA is not requiring the construction of a vegetated buffer, the additional setback distance will compensate for the loss of pollutant reductions in the surface runoff leaving the field that would have been achieved with a vegetated buffer without requiring CAFOs to remove this land from production.

EPA solicits comment on additional options to control erosion which would, in turn, reduce the amount of pollutants reaching waters of the U.S. The options for controlling erosion include: (1) implementing one of the three NRCS Conservation Practice Standards for Residue Management: No-Till and Strip Till (329A), Mulch Till (329B), or Ridge Till (329C) in the state Field Office Technical Guide; (2) requiring a minimum 30% residue cover; (3) achieving soil loss tolerance or "T"; or (4) implementing of the Erosion and Sediment Control Management Measure as found in EPA's draft *National Management Measures to Control Nonpoint Source Pollution from Agriculture*. This measure is substantially the same as EPA's 1993 *Guidance Specifying Management Measure for Sources of Nonpoint Pollution in Coastal Waters* which says to:

"* * * Apply the erosion control component of a Resource Management System (RMS) as defined in the 1993 Field Office Technical Guide of the U.S. Department of Agriculture National Resources Conservation Service to minimize delivery of sediment from agricultural lands

to surface waters, or design and install a combination of management and physical practices to settle the settleable solids and associated pollutants in runoff delivered from the contributing area for storms of up to and including a 10-year, 24-hour frequency."

Farmers entering stream buffers in the Conservation Reserve Program's (CRP) Continuous Sign-Up receive bonus payments, as an added incentive to enroll, include a 20 percent rental bonus, a \$100 per acre payment up-front (at the time they sign up), and another bonus at the time they plant a cover. These bonus payments more than cover costs associated with enrolling stream buffers, (i.e., rents forgone for the duration of their 10 or 15 year CRP contracts, and costs such as seed, fuel, machinery and labor for planting a cover crop). The bonuses provide a considerable incentive to enroll stream buffers because the farmers receive payments from USDA well in excess of what they could earn by renting the land for crop production. Farmers can enter buffers into the CRP program at any time.

EPA may also consider providing CAFOs the option of prohibiting manure application within 100 feet or constructing a 35 foot vegetated buffer. EPA solicits comment on any and all of these options.

Option 2. Option 2 retains all the same requirements for the feedlot and manure storage areas described under Option 1 with one exception: Option 2 would impose a BMP that requires manure application rates be phosphorus based where necessary, depending on the specific soil conditions at the CAFO.

Manure is phosphorus rich, so application of manure based on a nitrogen rate may result in application of phosphorus in excess of crop uptake requirements. Traditionally, this has not been a cause for concern, because the excess phosphorus does not usually cause harm to the plant and can be adsorbed by the soil where it was thought to be strongly bound and thus environmentally benign. However, the capacity for soil to adsorb phosphorus will vary according to soil type, and recent observations have shown that soils can and do become saturated with phosphorus. When saturation occurs, continued application of phosphorus in excess of what can be used by the crop and adsorbed by the soil results in the phosphorus leaving the field with storm water via leaching or runoff. Phosphorus bound to soil may also be lost from the field through erosion.

Repeated manure application at a nitrogen rate has now resulted in high to excessive soil phosphorus

concentrations in some geographic locations across the country. Option 2 would require manure application be based on the crop removal rate for phosphorus in locations where soil concentrations or soil concentrations in combination with other factors indicate that there is an increased likelihood that phosphorus will leave the field and contribute pollutants to nearby surface water and groundwater. Further, when soil concentrations alone or in combination with other factors exceed a given threshold for phosphorus, the proposed rule would prohibit manure application. EPA included this restriction because the addition of more phosphorus under these conditions is unnecessary for ensuring optimum crop production.

Nutrient management under Option 2 includes all the steps described under Option 1, plus the requirement that all CAFOs collect and analyze soil samples at least once every 3 years from all fields that receive manure. EPA would require soil sampling at 3 year intervals because this reflects a minimal but common interval used in crop rotations. This frequency is also commonly adopted in nutrient management plans prepared voluntarily or under state programs. When soil conditions allow for manure application on a nitrogen basis, then the PNP and record keeping requirements are identical to Option 1. Permit nutrient plans would have to be reviewed and updated each year to reflect any changes in crops, animal production, or soil measurements and would be rewritten and certified at a minimum of once every five years or concurrent with each permit renewal. EPA solicits comment on conditions, such as no changes to the crops, or herd or flock size, under which rewriting the plan would not be necessary and would not require the involvement of a certified planner.

The CAFO's PNP would have to reflect conditions that require manure application on a phosphorus crop removal rate. The manure application rate based on phosphorus requirements takes into account the amount of phosphorus that will be removed from the field when the crop is harvested. This defines the amount of phosphorus and the amount of manure that may be applied to the field. The PNP must also account for the nitrogen requirements of the crop. Application of manure on a phosphorus basis will require the addition of commercial fertilizer to meet the crop requirements for nitrogen. Under Option 2, EPA believes there is an economic incentive to maximize proper handling of manure by conserving nitrogen and minimizing the

expense associated with commercial fertilizer. EPA expects manure handling and management practices will change in an effort to conserve the nitrogen content of the manure, and encourages such practices since they are likely to have the additional benefit of reducing the nitrogen losses to the atmosphere.

EPA believes management practices that promote nitrogen losses during storage will result in higher applications of phosphorus because in order to meet the crops requirements for nitrogen a larger amount of manure must be applied. Nitrogen volatilization exacerbates the imbalance in the ratio of nitrogen to phosphorus in the manure as compared to the crop's requirement. Thus application of manure to meet the nitrogen requirements of the crop will result in over application of phosphorus and the ability of the crops and soil to assimilate phosphorus will reach a point at which the facility must revise the PNP to reflect phosphorus based application rates. EPA solicits comment on additional incentives that can be used to discourage those manure storage, treatment, and handling practices that result in nitrogen volatilization.

Under both Option 1 (N) and Option 2 (P), the application of nitrogen from all sources may not exceed the crop nutrient requirements. Since a limited amount of nutrients can be applied to the field in a given year, EPA expects facilities will select the site-specific practices necessary to optimize use of those nutrients. Facilities that apply manure at inappropriate times run the risk of losing the value of nutrients and will not be permitted to reapply nutrients to compensate for this loss. Consequently crop yields may suffer, and in subsequent years, the allowable application rates will be lower. For these reasons, facilities with no storage are assumed to need a minimal storage capacity to allow improved use of nutrients.

Option 2 provides three methods for determining the manure application rate for a CAFO. These three methods are:

- Phosphorus Index
- Soil Phosphorus Threshold Level
- Soil Test Phosphorus Level

These three methods are adapted from NRCS' nutrient management standard (Standard 590), which is being used by States' Departments of Agriculture to develop State nutrient standards that incorporate one or a combination of these three methods. EPA is proposing to require that each authorized state Permit Authority adopt one of these three methods in consultation with the State Conservationist. CAFOs would

then be required to develop their PNP based on the State's method for establishing the application rate. In those states where EPA is the permitting authority, the EPA Director would adopt one of these three methods in consultation with that State's Conservationist.

Phosphorus Index—This index assesses the risk that phosphorus will be transported off the field to surface water and establishes a relative value of low, medium, high or very high, as specified in § 412.33. Alternatively, it may establish a numeric ranking. At the present time there are several versions of the P-Index under development. Many states are working on a P-Index for their state in response to the NRCS 590 Standard, and NRCS itself developed a P-Index template in 1994 and is in the process of updating that template at the present time. There are efforts underway in the scientific community to standardize a phosphorus index and assign a numeric ranking.

At a minimum the phosphorus index must consider the following factors:

- Soil erosion
- Irrigation erosion
- Runoff class
- Soil P test
- P fertilizer application rate
- P fertilizer application method
- Organic P source application rate
- Organic P source application method

Other factors could also be included, such as:

- Subsurface drainage
- Leaching potential
- Distance from edge of field to surface water
- Priority of receiving water

Each of these factors is listed in a matrix with a score assigned to each factor. For example, the distance from edge of field to surface water assigns a score to different ranges of distance. The greater the measured distance, the lower the score. Other factors may not be as straightforward. For example, the surface runoff class relates field slope and soil permeability in a matrix, and determines a score for this element based on the combination of these factors. The same kind of approach could also be used for the subsurface drainage class, relating soil drainage class with the depth to the seasonal high water table. The values for all variables that go into determining a P-Index can either be directly measured, such as distance to surface water, or can be determined by data available from the state, such as soil drainage class that is based on soil types found in the state and assigned to all soil types. Finally, each factor is assigned a weight

depending on its relative importance in the transport of phosphorus.

When a P-Index is used to determine the potential for phosphorus transport in a field and the overall score is high, the operations would apply manure on a phosphorus basis (e.g., apply to meet the crop removal rate for phosphorus). When a P-Index determines that the transport risk is very high, application of manure would be prohibited. If the P-Index results in a rating of low or medium, then manure may be applied to meet the nitrogen requirements of the crop as described under Option 1.

However, the CAFO must continue to collect soil samples at least every three years. If the phosphorus concentration in the soil is sharply increasing, the CAFO may want to consider managing its manure differently. This may include changing the feed formulations to reduce the amount of phosphorus being fed to the animals, precision feeding to account for nutrient needs of different breeds and ages of animals. It may also include changing manure storage practices to reduce nitrogen losses.

There is a great deal of research on feed management, including potential effects on milk production when phosphorus in rations fed to dairy cows is reduced, and the cost savings of split sex and multistage diets and the addition of or adding the enzyme phytase to make the phosphorus more digestible by poultry and swine. Phytase additions in the feed of monogastrics have proven effective at increasing the ability of the animal to assimilate phosphorus and can reduce the amount of phosphorus excreted. Phytase use is also reported to increase bioavailability of proteins and essential minerals, reducing the need for costly supplemental phosphorus, and reducing necessary calcium supplements for layers. The CAFO may also consider limiting the application of manure. For example, the CAFO may apply manure to one field to meet the nitrogen requirements for that crop but not return to that field until the crops have assimilated the phosphorus that was applied from the manure application.

Phosphorus Threshold—This threshold which would be developed for different soil types is a measure of phosphorus in the soil that reflects the level of phosphorus at which phosphorus movement in the field is acceptable. Scientists are currently using a soluble phosphorus concentration of 1 part per million (ppm) as a measure of acceptable phosphorus movement. When the soil concentration of phosphorus reaches this threshold the concentration of phosphorus in the runoff would be expected to be 1 ppm. The 1 ppm value

has been used as an indicator of acceptable phosphorus concentration because it is a concentration that has been applied to POTWs in their NPDES permits. An alternative phosphorus discharge value could be the water quality concentration for phosphorus in a given receiving stream.

States which adopt this method in their state nutrient management standard would need to establish a phosphorus threshold for all types of soils found in their state.

Use of the phosphorus threshold in developing an application rate allows for soils with a phosphorus concentration less than three quarters the phosphorus threshold to apply manure on a nitrogen basis. When soils have a phosphorus concentration between 3/4 and twice the phosphorus threshold then manure must be applied to meet the crop removal requirements for phosphorus. For soils which have phosphorus concentrations greater than twice the phosphorus threshold, no manure may be applied.

Soil Test Phosphorus—The soil test phosphorus is an agronomic soil test that measures for phosphorus. This method is intended to identify the point at which the phosphorus concentration in the soil is high enough to ensure optimum crop production. Once that concentration range (often reported as a “high” value from soil testing laboratories) is reached, phosphorus is applied at the crop removal rate. If the soil test phosphorus level reaches a very high concentration, then no manure may be applied. Most soils need to be nearly saturated with phosphorus to achieve optimum crop yields. The soil phosphorus concentration should take into account the crop response and phosphorus application should be restricted when crop yield begins to level off.

The soil test phosphorus method establishes requirements based on low, medium, high and very high soil condition, and applies the same restrictions to these measures as are used in the P-Index. States that adopt this method must establish the soil concentration ranges for each of these risk factors for each soil type and crop in their state.

EPA anticipates that in most states, the permit authority will incorporate the State’s nutrient standard (590 Standard) into CAFO permits. For example, if the permit authority, in consultation with the State Conservationist, adopts a Phosphorus Index, then CAFO permits would include the entire P-Index as the permit condition dictating how the application rate must be developed. If a permit authority selects the Phosphorus

Threshold, then the CAFO permits must contain soil concentration limitations that reflect phosphorus-based application, as well as the level at which manure application is prohibited.

Each State Conservationist, in consultation with land grant university scientists and the state, must develop a Phosphorus Index for that state by May 2001. EPA may consider eliminating the use of the soil phosphorus threshold level and the soil test phosphorus level as methods for determining the manure application rate for a CAFO and requiring the use of the state Phosphorus Index. Scientists studying phosphorus losses from agricultural lands are supporting the development and use of the Phosphorus Index since it combines the factors critical in determining risk of phosphorus rate and transport to surface waters, including the soil phosphorus threshold level, when developed. EPA is soliciting comment on this option.

Finally, under Option 2 EPA is proposing to require CAFOs that transfer manure off-site to provide the recipient of the manure with information as to the nutrient content of the manure and provide the recipient with information on the correct use of the manure. See Section VII.E.4, for a complete discussion of the requirements for off-site transfer of manure.

As discussed in Section VI, compliance costs for manure transfer assessed to the CAFO include hauling costs and record keeping. If the recipient is land applying the manure, the recipient is most likely a crop farmer, and the recipient is assumed to already have a nutrient management plan that considers typical yields and crop requirements. The recipient is also assumed to apply manure and wastes on a nitrogen basis, so the application costs are offset by the costs for commercial fertilizer purchase and application. EPA assumes the recipient may need to sample soils for phosphorus, and costs for sampling identically to the CAFO, i.e. every three years. EPA has not accounted for costs that would result from limiting the amount or way recipients are currently using manure. EPA solicits comment on the impact to recipients who currently use manure and may have to change their practices as a result of this requirement. In cases where manure is received for alternative uses, the recipient is deemed to already maintain the appropriate records.

EPA solicits comments on whether there should be required training for persons that will apply manure. There are some states which have these requirements. Proper application is critical to controlling pollutant

discharges from crop fields. Some states have establish mandatory training for persons that apply manure. EPA will consult with USDA on the possibility of establishing a national training program for manure applicators.

Rotational Grazing. At the request of the environmental community, EPA has investigated rotational grazing as an alternative to confinement-based livestock production. Any pasture or grazing operation is by definition not a form of confinement, therefore use of these practices are outside of the scope of these regulations.

Intensive rotational grazing is known by many terms, including intensive grazing management, short duration grazing, savory grazing, controlled grazing management, and voisin grazing management. This practice involves rotating livestock and poultry among several pasture subunits or paddocks, often on a daily basis, to obtain maximum efficiency of the pasture land.

Due to the labor, fencing, water, and land requirements for intensive rotational grazing, typically only small dairy operations with less than 100 head use this practice. Few beef feedlots practice intensive rotational grazing. Poultry on pasture is usually housed in a portable building or pen holding up to 100 birds that is moved daily; rarely are more than 1,000 birds in total raised in this manner. Swine have also been successfully raised on pasture, most frequently as a seasonal farrowing operation in combination with seasonal sheep or cow grazing. Climate and associated growing seasons make it very difficult for operations to use an intensive rotational grazing system throughout the entire year. Most dairy operations and beef feedlots that use rotational grazing typically operate between 3 and 9 months of the year, with 12 months most likely only in the southern states. Poultry on pasture are produced for about 6 months, and pigs are typically farrowed once per year.

Grazing systems are not directly comparable to confined feeding operations, as one system can not readily switch to the other. Intensive rotational grazing systems are reported to have advantages over confined feeding operations: reduced housing and feed costs, improved animal health, less manure handling, and more economic flexibility. Intensive rotational grazing also encourages grass growth and development of healthy sod, which in turn reduces erosion. In a good rotational system, manure is more evenly distributed and will break up and disappear from the surface faster.

Despite these advantages, studies do not indicate significant reductions of

pathogens or nutrients in runoff to nearby streams as compared to manured fields. Rotational grazing systems may still require manure maintenance near watering areas and paths to and from the paddock areas. There are also limits to the implementation of intensive rotational grazing systems, which are highly dependent upon: available acreage, herd size, land resources, labor, water availability, proximity of pasture area to milking center for dairy operations, and feed storage capabilities. Grazing systems usually produce lower animal weight gain and milk production levels, provide limited manure handling options, and do not provide the level of biosecurity that confinement farms can obtain.

Proposed Basis for BPT Limitations. EPA is not proposing to establish BPT requirements for the beef, dairy, swine, veal and poultry subcategories on the basis of Option 1, because it does not represent the best practicable control technology. In areas that have high to very high phosphorus build up in the soils, Option 1 would not require that manure application be restricted or eliminated. Thus, the potential for phosphorus to be discharged from land owned or controlled by the CAFOs would not be controlled by Option 1. Consequently Option 1 would not adequately control discharges of phosphorus from these areas. Option 2 would reduce the discharge of phosphorus in field runoff by restricting the amount of phosphorus that may be applied to the amount that is appropriate for agricultural purposes or prohibiting the application of manure when phosphorus concentrations in the soil are very high and additional phosphorus is not needed to meet crop requirements.

EPA is proposing to establish BPT limitations for the beef, dairy, swine, veal and poultry subcategories on the basis of Option 2 with the exception that it is co-proposing options with and without the certification regulations for off-site land application of manure. EPA's decision to base BPT limitations on Option 2 treatment reflects consideration of the total cost of application of technology in relation to the effluent reduction benefits to be achieved from such application. Option 2 is expected to cost \$549 million under the two-tier structure and achieve 107 million pounds of pollutant reductions for a total cost to pound ratio of \$0.57. The three-tier structure is estimated to cost \$551 for a total cost to pound ratio of \$0.51.

The Option 2 technology is one that is readily applicable to all CAFOs. The production area requirements represent

the level of control achieved by the majority of CAFOs in the beef, dairy, swine, poultry and veal subcategories. USDA and the American Society of Agricultural Engineers cite the 25-year, 24-hour storm as the standard to which storage structures should comply. This has been the standard for many years, and most existing lagoons and other open liquid containment structures are built to this standard. As described above, the land application requirements associated with Option 2 are believed to represent proper agricultural practice and to ensure that CAFO manure is applied to meet the requirements of the crops grown and not exceed the ability of the soil and crop to absorb nutrients.

EPA believes any of the three methods for determining when manure should be applied on a phosphorus basis would represent BPT. Each method has distinct advantages which, depending on the circumstances, could make one method preferred over another. There has been considerable work done in this area within the past few years and this work is continuing. EPA believes that this proposed BPT approach provides adequate flexibility to allow states to develop an approach that works best for the soils and crops being grown within their state. Nonetheless, EPA will continue to work with soil scientists and may consider standardizing the factors included in the phosphorus index to develop a standard rating scale, for the purpose of CAFO requirements. EPA also solicits comment on whether there should be some EPA oversight or approval of the phosphorus method developed by the states. Specifically EPA solicits comment whether of EPA should establish standards that must be included in a phosphorus index. These standards may include specifying additional criteria which should be considered in the index, such as distance to surface water. EPA also seeks comment on whether it should establish minimum standards on how these criteria must be factored into a Phosphorus Index, such as specifying the weight to be assigned to the various criteria included in the Index and assigning the values for specific ranges for each criteria. EPA may consider establishing a minimum standard for the phosphorus threshold method for example requiring that at a minimum the phosphorus threshold be based on the soil phosphorus concentration that would result in a soluble phosphorus concentration in the runoff of 1 ppm. EPA may also consider establishing specific sampling protocols for

collecting manure and soil samples and analyzing for nutrients.

CAFOs must also develop and implement a PNP that establishes the appropriate manure application rate. EPA believes the land application rates established in accordance with one of the three methods described in today's proposed regulation, along with the prohibition of manure application within 100 feet of surface water, will ensure manure and wastewater are applied in a manner consistent with proper agricultural use. EPA has included a discussion of how to develop a PNP in section VIII.C.6.

EPA believes that state sampling and analytical protocols are effective; however, soil phosphorus levels can vary depending on how the soil samples are collected. For example, a CAFO that surface-applies manure will deposit phosphorus in the surface layer of the soil and should collect soil samples from the top layer of soil. If this CAFO collects soil samples to a depth of several inches the analysis may understate the phosphorus concentrations in the soil. EPA solicits comments on the need to establish sampling protocols for soil sampling.

4. Best Control Technology for Conventional Pollutants (BCT)

In evaluating possible BCT standards, EPA first considered whether there are any candidate technologies (*i.e.*, technology options); that are technologically feasible and achieve greater conventional pollutant reductions than the proposed BPT technologies. (Conventional pollutants are defined in the Clean Water Act as including: Total Suspended Solids (TSS), Biochemical Oxygen Demand (BOD), pH, oil and grease and fecal coliform.) EPA considered the same BAT technology options described below and their effectiveness at reducing conventional pollutants. EPA's analysis of pollutant reductions has focused primarily on the control of nutrients, nitrogen and phosphorus. However, the Agency has also analyzed what the technology options can achieve with respect to sediments (or TSS), metals, and pathogens. Although livestock waste also contains BOD, EPA did not analyze the loadings or loadings reductions associated with the technology options for BOD. Thus, the only conventional pollutant considered in the BCT analysis is TSS. EPA identified no technology option that achieves greater TSS removals than the proposed BPT technologies (see the Technical Development Document). EPA does not believe that these technology options would substantially