



Technical Development Document for the Final Effluent Limitations Guidelines and Standards for the Meat and Poultry Products Point Source Category (40 CFR 432)

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EPA-821-R-04-011



SECTION 5

SUBCATEGORIZATION

This section presents the subcategorization for the final rule for the meat and poultry products (MPP) effluent limitations guidelines (ELGs). Section 5.1 introduces EPA's subcategorization criteria. Section 5.2 describes each subcategory in detail and discusses the differences between the existing subcategorization and the subcategorization for the final rule. The final subcategorization is the same as that proposed in the February 25, 2002, revisions to 40 CFR Part 432 (67 FR 8582), with some refinement to the size definitions in one of the subcategories.

5.1 SUBCATEGORIZATION PROCESS

Section 304(b)(2)(B) of the Clean Water Act (CWA) (33 U.S.C. 1314(b)(2)(B)) requires EPA to consider a number of different factors when developing ELGs. For example, when developing limitations that represent the best available technology economically achievable (BAT) for a particular industry category, EPA must consider, among other factors,

- Age of the equipment and facilities
- Location
- Manufacturing processes employed
- Types of treatment technologies to reduce effluent discharges
- Cost of effluent reductions, and
- Non-water quality environmental impacts.

The statute also authorizes EPA to take into account other factors that the Administrator deems appropriate. In addition, it requires the BAT model technology EPA chooses to be economically achievable, which usually involves considering both compliance costs and the overall financial condition of the industry.

EPA took these factors into account in considering whether different ELGs were appropriate for subcategories within the MPP industry. For this industry, EPA broke the industry down into subcategories with similar characteristics. This breakdown recognized the major

differences among companies within the industry, which might reflect, for example, different processes or economies of scale. Subdividing an industry into subcategories results in more tailored regulatory standards, thereby increasing regulatory predictability and diminishing the need to address variations among facilities through a variance process. See *Weyerhaeuser Co. v. Costle*, 590 F. 2d 1011, 1053 (D.C. Cir. 1978).

For the final MPP rule, EPA used industry survey data, EPA sampling data, and other data collected by or provided to EPA subsequent to the proposal for the subcategorization analysis. EPA analyzed various subcategorization criteria for trends in discharge flow rates, pollutant concentrations, and treatability to determine where subcategorization was warranted. Equipment and facility age and facility location were not found to affect wastewater generation or wastewater characteristics; therefore, age and location were not used as a basis for subcategorization. An analysis of non-water quality environmental characteristics (e.g., solid waste and air emission effects) also showed that these characteristics did not constitute a basis for subcategorization. See Section 12 of this document for more information on non-water quality environmental impacts.

Even though the size (e.g., acreage, number of employees, production rates) of a facility does not influence wastewater flow rates or pollutant loadings, size was used as a basis for subcategorization because more stringent limitations would not be cost-effective for small meat, poultry, and rendering facilities. In addition, small facilities discharge a very small portion of the total industry discharge. Therefore, this final rule does not revise the limitations and standards for existing and new small facilities in Subcategories A through J, and does not establish effluent limitations for existing small facilities in Subcategories K and L. However, the final rule establishes less stringent requirements for new small facilities in Subcategories K and L. See Section 2 of this document for definition of “small” and “non-small” facilities for each subcategory. Additional discussion related the why EPA established new source performance standards for small poultry facilities is provided in Section 13.2 of this document and in the *Economic and Environmental Benefits Analysis of the Final Meat and Poultry Products Rule* (EPA-821-R-04-010).

Data collected for the final rule indicate that slaughtering operations use substantial amounts of water for initial processing (kill through carcass shipping or cut-up). Slaughtering or first processing operations typically involve taking the live animal and producing whole or cut-up meat carcasses (which then might be further processed). Wastewaters from first processing operations are generated from a variety of sources that generally include the areas where animals are killed and bled; hides, hair, or feathers are removed; animals are eviscerated; carcasses are washed and chilled; and carcasses are trimmed and cut to produce whole carcasses or carcass parts. As a result of these operations, wastewaters that contain varying levels of blood, animal parts, viscera, fats, bones, and the like are generated. In addition, federal food safety concerns require frequent and extensive cleanup of slaughtering operations, which also contributes to wastewater generation. These cleanup wastewaters contain not only slaughtering residues and particulate matter but also products used for cleaning and disinfection (detergents and sanitizing agents).

Alternatively, most further processing operations generate wastewaters from sources different from slaughtering operations. These sources, and the resulting wastewater characteristics, are dependent on the type of finished product desired. Further processing refers to operations that use whole carcasses or cut-up meat or poultry products to produce fresh or frozen products, and it can include the following types of processing: cutting and deboning, cooking, seasoning, smoking, canning, grinding, chopping, dicing, forming, breading, breaking, trimming, skinning, tenderizing, marinating, curing, pickling, extruding, and linking. Unlike slaughtering operations, most further processing operations do not use significant amounts of water, except for cleanup. Wastewaters generated from further processing operations contain some soft and hard tissue (e.g., muscle, fat, and bone), blood, and other substances used in final product preparation (e.g., breading, spices), as well as products used for cleaning and disinfection (detergents and sanitizing agents).

Rendering operations primarily process slaughtering by-products (e.g., animal fat, bone, blood, hair, feathers, dead animals). The amount of water used and the characteristics of the wastewater generated by rendering operations are highly dependent on a number of factors, including the type of product produced (e.g., edible versus inedible), the rendering process used

(batch versus continuous, wet process versus dry process), and the source and type of raw materials used (e.g., poultry processors, slaughterhouses, butcher shops, supermarkets, restaurants, fast-food chains, farms, ranches, feedlots, animal shelters). In general, rendering operations involve cooking the raw materials to recover fats, oil, and grease; remaining residue is dried and then granulated or ground into a meal using a continuous dry rendering process. A significant portion of wastewater pollutant loadings generated from rendering operations is condensed steam from cooking operations. Unlike slaughtering and further processing operations, rendering cleanup operations are usually less rigorous, generating a smaller proportion of the total expected wastewater flow.

5.2 SUBCATEGORIES FOR THE FINAL RULE

EPA is establishing new or revised ELGs and standards for 9 of the 10 existing subcategories in the MPP point source category (40 CFR Part 432). The Agency is establishing no new or revised EIGs or pretreatment standards for the small processor category. Specifically, EPA is establishing new limitations and standards that are the same for large facilities in the following MPP subcategories: Simple Slaughterhouses (Subpart A), Complex Slaughterhouses (Subpart B), Low-Processing Packinghouses (Subpart C), and High-Processing Packinghouses (Subpart D). In addition, EPA is establishing new limitations and standards that are the same for facilities in the following MPP subcategories: Meat Cutters (Subpart F), Sausage and Luncheon Meats Processors (Subpart G), Ham Processors (Subpart H), and Canned Meats Processors (Subpart I).

EPA is also retaining the Renderer (Subpart J) subcategory and new limitations and standards for facilities in this subcategory. This rule does not revise the existing limitations and standards for small facilities in Subparts A through J (which would include by definition all Subpart E [Small Processor] facilities). Finally, EPA is adding two MPP subcategories in 40 CFR Part 432: Poultry First Processing (Subpart K) and Poultry Further Processing (Subpart L). These two new subcategories will cover both small and large poultry processing facilities, although new source small facilities in each of the subcategories are required to meet less stringent requirements than the non-small poultry facilities. EPA chose less stringent

performance standards for new small poultry processing facilities because more stringent limits would not be cost-effective.

EPA believes that the similarities among Simple Slaughterhouses, Complex Slaughterhouses, Low-Processing Packinghouses, and High-Processing Packinghouses (Subcategories A through D), including the commonality of slaughter of live animals, represents a rational basis for establishing new limitations and standards that are the same for all four subcategories. This approach allows the use of the same effluent limitations for all four subcategories, with possible additional allowances reflecting the degree of further processing and rendering. Data collected by EPA for the final rule indicate limited variability in wastewater characteristics among first processing facilities.

For the final rule, EPA established the same limitations and standards applicable to all meat further processing subcategories (meat cutters, sausage and luncheon meat processors, ham processors, and canned meat processors). The decision to group meat further processors for purposes of establishing the same effluent limitations is also based on the expected similarities among these four subcategories. For the final rule, there was very limited data available to EPA for meat further processing facilities to enable a quantitative analysis of the potential differences in production processes or wastewater characteristics among the subcategories. However, based on the limited data, EPA expects similarities among facilities in Subcategories F through I in the absence of slaughtering and on-site rendering activities.

The rationale that EPA used for establishing two new subcategories for poultry, first processing and further processing, with separate limitations and standards, is in part the same as that used for grouping Subcategories A through D and F through I for meat. Included were the presence (Subcategory K) or absence (Subcategory L) of slaughtering. However, based on analysis of data collected for the final rule, EPA also identified differences in between poultry and meat processing facilities, resulting in the decision to establish subcategories separate from red meat. These differences include, for example, reduced water use for poultry processing facilities, as compared to meat processing facilities. Immediately following, each subcategory is described in more detail in terms of its manufacturing processes and wastewater characteristics.

5.2.1 Meat Slaughterhouses and Packinghouses—Subparts A, B, C, and D

EPA is retaining the existing subcategories. EPA believes that retaining the existing subcategorization scheme will simplify implementation for the permit writers, as well as generate appropriate limitations and standards for the facilities.

In addition to the existing mass-based limitations, which are different for each of the subcategories, the final regulation requires all meat direct dischargers subject to Subparts A through D that slaughter more than 50 million pounds live weight kill (LWK) per year to achieve the same concentration-based effluent limitations for the additional parameters being regulated. EPA finds that the slaughtering and initial processing operations used in all four of these subcategories are the key factors in determining wastewater characteristics and treatability. Moreover, EPA believes there are no significant differences between these four subcategories in terms of the age, location, and size of the facilities.

5.2.2 Meat Further Processing—Subparts F, G, H and I

EPA is retaining the existing subcategories. EPA believes that retaining the existing subcategorization scheme will simplify implementation for the permit writers, as well as generate appropriate limitations and standards for the facilities.

The final regulations requires all facilities that generate greater than 50 million pounds per year of finished meat products without performing slaughtering to be regulated by the same concentration-based ELGs for the additional parameters being regulated. Subpart E (Small Processor) facilities are excluded from these new requirements by definition. The existing ELGs allow discharges based on the amount of finished product that is further processed on-site. The expected wastewater characteristics and treatability for the four subcategories are sufficiently similar to group them together for the purpose of revising or setting new limitations and standards (See DCN 300000). Moreover, EPA believes there are no significant differences between these four subcategories in terms of the age, location, and size of the facilities. EPA believes that this subcategorization scheme will simplify implementation for the permit writers, as well as generate appropriate limitations and standards for the facilities.

5.2.3 Renderer—Subpart J

Subpart J applies to independent rendering facilities, which are facilities that only render raw materials and process hides and do no first or further processing. The final subcategorization scheme requires all independent rendering facilities that render more than 10 million pounds per year of raw material to be regulated by the same concentration-based ELGs. This scheme is a change from the current guidelines, which apply only to independent renderers that render more than approximately 27.4 million pounds raw material per year (or 75,000 pounds raw material per day for a facility that operates 365 days per year). The existing limitations and standards allow discharges based on the amount of raw material rendered on-site.

5.2.4 Poultry First Processing—Subpart K

EPA has divided the poultry first processors into two segments, small and non-small. Small poultry first processors slaughter 100 million pounds of poultry per year or less (measured as live weight killed); non-small poultry first processors slaughter more than 100 million pounds of poultry per year. In the February 25, 2002, *Federal Register* notice, EPA proposed that the cutoff between small and non-small processors be 10 million pounds. Based on comments received in response to the proposed rule and on further analysis, EPA decided to raise the production threshold.

EPA is not establishing limitations for existing small facilities because the cost of compliance with limitations for any of the analyzed technology options in relation to the effluent reduction benefits is wholly disproportionate, even though the technologies are available and applicable to this type of wastewater. See Section 9 of this document for a discussion of the technology options, and see Section 13 of this document for more details on how EPA developed the two segments and the specific requirements for each.

5.2.5 Poultry Further Processing—Subpart L

EPA has divided the poultry further processors into two segments, small and non-small. Small poultry further processors generate 7 million pounds of finished product per year or less; non-small poultry further processors generate more than 7 million pounds of finished product per year. See Section 9 of this document for a discussion of the technology options, and see

Section 13 of this document for more details on how EPA developed the two segments and specific requirements for each segment. The ELGs allow discharges to be regulated by the same concentration-based ELGs.

5.3 REFERENCES

USEPA (U.S. Environmental Protection Agency). 1974. *Development Document for Effluent Limitations Guidelines and New Source Performance Standards—Red Meat Processing Segments of the Meat Products Point Source Category*. EPA-440/1-74-012a. U.S. Environmental Protection Agency, Office of Air and Water Programs, Effluent Guidelines Division, Washington, DC. (DCN 00162)

USEPA (U.S. Environmental Protection Agency). 1975. *Development Document for Proposed Effluent Limitation Guidelines and New Source Performance Standards for the Poultry Processing Point Source Category*. EPA-440/1-75-031b. U.S. Environmental Protection Agency, Office of Water and Hazardous Materials, Effluent Guidelines Division, Washington, DC. (DCN 00140)