

9.6 Agricultural Tilling**SOURCE CODE:** 28-01-000-003**DESCRIPTION:**

Fugitive dust from agricultural operations can be a significant contributor of PM₁₀ emissions in some rural areas. Agricultural operations are typically divided into three classifications: soil preparation, soil maintenance, and crop harvesting. The agricultural tilling source category focuses primarily on soil preparation. Soil preparation includes such operations as plowing, harrowing, leveling, and dicing.

POLLUTANTS: PM₁₀**ROG:** Not applicable**POINT SOURCE ADJUSTMENTS:** None.**METHODOLOGY:**

To estimate emissions from agricultural tilling, the following equation derived from AP-42 and the Air Resources Board's *Emission Inventory Procedural Manual* (ARB, 1995) is used:

$$\text{Emissions}_c = 5.38(s)^{0.6} \times k \times \text{HP}_c \times \text{Area}_c \quad (9.6-1)$$

where:

Emissions _c	=	Annual PM ₁₀ emissions for crop type, c;
5.38(s) ^{0.6}	=	Base emission factor (kg PM/hectare-pass);
k	=	Particle size multiplier (0.21 for PM ₁₀ from AP-42);
s	=	Silt content (%) - (see NOTE #2);
HP _c	=	Number of hectare-passes per hectare for crop type, c;
		and
Area _c	=	Total cultivated area for crop type, c.

The first term of the equation is taken from ~~Section~~ 11.2.2 of the 4th Edition of AP-42 (AP-42, 1993). This term is used to estimate emissions from a specific operation.

The second term of the equation (the number of hectare-passes per hectare) is used to account for the multiple tilling operations that are used for most crop