

Section xx: Mineral Processes—Asphaltic Concrete Production

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EMISSION INVENTORY SOURCE CATEGORY

Industrial Processes: Mineral Processes: Asphaltic Concrete Production

EMISSION INVENTORY CODES (CES CODES) AND DESCRIPTION

430-424-7006-0000 (47001)—Asphaltic Concrete Production

METHOD SUMMARY

Asphaltic concrete is produced by mixing liquid asphalt cement with size-graded aggregate. The end product is used primarily for paving and repairing road surfaces. The majority of asphalt cement is hot-mix asphalt, which is made by one of two processes: batch mix or drum mix. Both methods require drying of the aggregate to remove moisture before mixing it with liquid asphalt cement that has been heated to maintain viscosity. Emissions attributed to the asphaltic concrete production process include the asphalt plant, dryer, storage piles, and vehicle traffic, which together emit all criteria pollutants.

This emission category has a limited number of facilities, so a bottom-up approach is used. The U.S. Census County Business Patterns indicated 5 asphalt paving mixture and block manufacturing (NAICS 324121) establishments in Sacramento County in 1999. It indicated 5 sources in 1998. The permit database was searched for all permits related to “asphalt”. As of May 2002, the query returned 14 different permits, of which only 7 were actual batch-mix or drum-mix asphalt plants, all of which are inventoried as point sources. These 7 permits were held by 4 different companies at 5 different locations. Thus, it appears that the District’s permit system has accounted for all asphaltic concrete producers in the county. The point source inventory should therefore account for all emissions from this source category.

For quality control purposes, the production rate of the point sources was compared to the state production rate proportioned to Sacramento County based on employment data from the 1999 County Business Patterns (approximately 4%). Estimated production data was obtained from the Energy Information Administration report on Asphalt and Road Oil Consumption. Of the 20.366 mmbbl produced in California, it is estimated (STI Area Source Methodology) that 80% is used for asphaltic concrete production and 90% of that amount is used for hot-mix asphalt. Asphaltic concrete is typically comprised of 8% asphalt cement. The resulting calculation of estimated production of asphaltic concrete for Sacramento County is: $(20.366 \text{ mmbbl}) \times (0.80) \times (0.90) \times (0.1936 \text{ tons/mmbbl}) \times (0.04) / (0.08) = 1.4$ million tons. Actual production was approximately 2 million tons in year 2000.

ACTIVITY DATA SOURCE:	2000 surveys
EMISSION FACTOR SOURCE:	Primarily from AP-42 (1995) Tables 11.1-1 through 11.1-8 but varies by individual source
TEMPORAL INFORMATION:	Daily Activity: 10 hrs/day Weekly Activity: 5 days/week Monthly Activity: 52 weeks/year
MOST RECENT UPDATE:	2000
GROWTH PARAMETER:	Population

EMISSION SUMMARY (1999 ANNUAL AVERAGE TONS/DAY) UNRECONCILED

CES#	TOG	ROG	CO	NOX	SOX	PM	PM10
47001	0.0703	0.0587	0.2292	0.1145	0.0105	0.1655	0.1092

NEEDED CLARIFICATIONS/CORRECTIONS TO CURRENT METHOD

None.

FUTURE PLANS FOR METHOD UPDATE/REVISION

Continue the point source classification of all sources included in this area source category.