

Final Work Plan - California Regional PM10/PM2.5 Air Quality Study Ammonia Emissions Improvement Projects in Support of CRPAQS Aerosol Modeling and Data Analyses: Draft Ammonia Inventory Development (pages 2-16 to 2-18)

Domestic Sources

Domestic sources include ammonia emissions associated with pets, cigarette smoke, untreated human waste, perspiration, respiration and household ammonia use. The ENVIRON team will use emission factors developed for the South Coast Air Basin inventory (ATC 2000.) This recent study provides the most comprehensive analysis of literature for these sources. Emission factors for domestic sources are shown in Table 2-8.

Table 2-8. Domestic sources emission factors.

Source	Proposed EIC Codes	Emission Factor, lbs/person/year	Emission Factor Reference
Respiration	690-995-0000-0001	0.004	e
Perspiration	690-995-0000-0002	0.550	e
Household Use	690-995-0000-0003	0.050	a
Untreated Human Waste	690-995-0000-0004	0.050	e
Cigarettes	690-995-0000-0005	0.000	c,d
Infant - Cloth Diapers	690-995-0000-0006	6.900	b
Infant - Disposable Diapers	690-995-0000-0007	0.360	b
Cats	690-995-0000-0008	0.029	e
Dogs	690-995-0000-0009	0.265	e
Homeless	690-995-0000-0010	11.000	b

^a Census of Population and Housing, U.S. Bureau of the Census, Current Population Reports, Series P23-194, Population Profile of the United States: 1997. U.S. Government Printing Office, Washington, D.C., 1998.

^b Radian, 1987 Ammonia Emission Inventory (1991), September.

^c California State Board of Equalization, "Table 30B - Cigarette Distributions and Per Capita Consumption, 1959-60 to 1997-98." 1997 Annual Report, A-41

^d Warn T.E., Zelmanowitz S., and Saeger M. (1990): Development and Selection of Ammonia Emission Factors for 1985 NAPAP Emissions Inventory. Final Report Prepared for Office of Research and Development U.S. Environmental Protection Agency, Washington, D.C. by Alliance Technologies Corporation, Chapel Hill, N.C., PB90-235094, EPA-600/7-90-014, June.

^e Sutton, M.A., C.J. Place, M. Eager, D. Fowler, and R.I. Smith (1995): Assessment of the Magnitude of Ammonia Emissions in the United Kingdom, Atmospheric Environment, (29):1393-1411.

Activity data for pets will be developed based on the ratio of pets per capita developed for the 1991 South Coast Air Basin inventory (Radian 1991) and 2000 census data from the U.S. Bureau of the Census. These ratios are specific to the urban and suburban settings. A determination of the setting, urban or suburban, will be made for each county, based on the predominant setting within each county.

Activity data will be based on per capita cigarette consumption data from the most current annual report on cigarette distribution and per capita consumption from the California State Board of Equalization in conjunction with 2000 census data from the U.S. Bureau of the Census.

Activity data for untreated human waste includes the population of homeless people and the population of infants of diaper wearing age. Most counties have a service department responsible for the homeless population. The ENVIRON team will survey the States most populous counties to determine an appropriate ratio of homeless to total population for each county. Infant population will be calculated as the sum of the under one year old population , the one to two year old population, the two to three year old population and half of the three to four year old population from the 2000 census data from the U.S. Bureau of the Census.

Activity data for respiration and perspiration will be the total population from the 2000 census data from the U.S. Bureau of the Census.

All domestic sources will be allocated based on total population from the 2000 census data from the U.S. Bureau of the Census except for infants, which will be distributed based on the diaper wearing population described above.