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Data Summaries of Base Year and Future Year Mass and Modeling Inventories for Heavy- Duty Engine and Vehicle Standards and Highway Diesel Fuel Control Requirements (HDD) Rulemaking—Detailed Report

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Data Summaries of Base Year and Future Year Mass and Modeling Inventories for Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Control Requirements (HDD) Rulemaking—Detailed Report

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September 29, 2000

EPA Contract No. 68-D7-0067
Work Assignment No. 3-15
Pechan Report No. 00.09.001/9008-315 (Rev.)

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ACRONYMS AND ABBREVIATIONS

CO	carbon monoxide
EGU	electric generating unit
EPA	Environmental Protection Agency
HDD	heavy-duty diesel
HDGV	heavy-duty gasoline vehicle
LDDT	light-duty diesel truck
LDDV	light-duty diesel vehicle
LDGT1	light-duty gasoline truck (less than 6,000 pounds in weight)
LDGT2	light-duty gasoline truck (6,000 to 8,500 pounds in weight)
LDGV	light-duty gasoline vehicle
MC	motorcycle
NH ₃	ammonia
NO _x	oxides of nitrogen
PM	particulate matter
PM ₁₀	primary particulate matter with an aerodynamic diameter less than or equal to 10 micrometers
PM _{2.5}	primary particulate matter with an aerodynamic diameter less than or equal to 2.5 micrometers
REMSAD	Regulatory Modeling System for Aerosols and Deposition
SO ₂	sulfur dioxide
SOA	secondary organic aerosols
SO _x	oxides of sulfur
SSD	summer season daily
UAM	Urban Airshed Model
U.S.	United States
VMT	vehicle miles traveled
VOC	volatile organic compounds

EXECUTIVE SUMMARY

This report is a compilation of detailed emissions summaries for the emission inventories prepared to support analysis of the Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Control Requirements (HDD) rulemaking. To assist future State and Federal implementation of this program, the United States (U.S.) Environmental Protection Agency (EPA) is developing national annual and temporal emission inventories and applying the Urban Airshed Model (UAM-V) and Regulatory Modeling System for Aerosols and Deposition (REMSAD) to examine the regional ozone and particulate matter (PM) concentration response to a series of emission control strategies. The emission inventories developed to support the HDD rulemaking include the following:

- 1996 Base Year;
- 2007 Base Case;
- 2007 Control Case;
- 2020 Base Case;
- 2020 Control Case;
- 2030 Base Case; and
- 2030 Control Case.

These national inventories were prepared for all 50 States at the county level for mobile highway and mobile nonroad sources. They were prepared for the 48 contiguous States at the county-level for electric generating unit (EGU), non-EGU point, and stationary area sources. The inventories contain annual and typical summer season day (SSD) emissions for the following pollutants: oxides of nitrogen (NO_x), volatile organic compounds (VOC), carbon monoxide (CO), oxides of sulfur (SO_x), primary particulate matter with an aerodynamic diameter less than or equal to 10 micrometers and 2.5 micrometers (PM_{10} and $\text{PM}_{2.5}$), ammonia (NH_3), and secondary organic aerosols (SOA). The 2007, 2020, and 2030 Base Case inventories are prepared by applying growth and control assumptions to the 1996 Base Year inventory. The 2007, 2020, and 2030 Control Case inventories are developed from the 2007, 2020, and 2030 Base Case inventories, respectively, by applying HDE/FS control assumptions to the on-highway vehicle and nonroad emission source sectors. This report provides supplemental data to the report entitled *Procedures for Developing Base Year and Future Year Mass and Modeling Inventories for the Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel (HDD) Rulemaking*, September 29, 2000, which documents the procedures and assumptions applied to prepare the emissions inventories.

This report contains summary data for the 48 contiguous States only, although for highway mobile and nonroad mobile sources all 50 States were included in the inventories.

This report provides the following types of summaries for each of the seven inventories:

- I. Annual National HDD Rulemaking Emissions and Emissions Reductions by Tier 2 Source Category
- II. Annual State-Level Emissions and Emissions Reductions by Major Source Category
- III. Summer Season Daily State-Level Emissions and Emissions Reductions by Major Source Category
- IV. State-Level Annual and SSD NO_x Emissions and Emissions Reductions by State and Inventory
- V. County-Level Annual and Average Daily Vehicle Miles Traveled (VMT) by State, County, and Vehicle Type

For the Tier 2-level summary tables presented in Section I, biogenic emissions for NH₃ are shown because these emissions are included in the area source inventories prepared under this project. Biogenic VOC emissions are not shown in these tables because they are prepared separately by EPA for input to the modeling analyses.

For the off-highway Tier 1 category shown in the tables for Section I, total off-highway emissions do not match the totals shown for nonroad emissions by State presented in the tables for Sections II, III, and IV. This is because the emissions for four SCC's are included in the tables that summarize emissions by State, but do not fall under the off-highway Tier 1 category shown in the Section I tables. The SCCs, their descriptions, and the Tier 1 and 2 categories to which they are assigned in the Section I tables are as follows:

- Tier 1 Category =** **Miscellaneous**
- Tier 2 Category =** **Fugitive Dust**
- SCC = 2275085000: Mobile Sources; Aircraft; Unpaved Airstrips

- Tier 1 Category =** **Storage and Transportation**
- Tier 2 Category =** **Petroleum and Petroleum Product Storage**
- SCC = 2275900000: Mobile Sources; Aircraft; Refueling; All fuels; All processes
- SCC = 2275900101: Mobile Sources; Aircraft; Refueling; All fuels; Displacement Loss/Uncontrolled
- SCC = 2275900102: Mobile Sources; Aircraft; Refueling; All fuels; Displacement Loss/Controlled

SECTION I
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EMISSIONS REDUCTIONS BY TIER 2 SOURCE CATEGORY

SECTION II
ANNUAL STATE-LEVEL EMISSIONS AND EMISSIONS
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