

US EPA ARCHIVE DOCUMENT

ENVIRON

EPA's NEW NONROAD MOBILE EMISSIONS MODEL

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Emission Inventory: Living in a Global Environment
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New Orleans, Louisiana

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Overview

- History and timetable
- General description and structure
- Example of model setup and view
- Revisions in progress
- Staying informed

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Model History and Timetable

- Former EPA guidance: NEVES, 1991
- Draft NONROAD model release and Public Workshop, June 1998
- 60-day comment periods for all supporting technical documents
- Model updates posted on the Web, July and September 1998
- Draft final model to be released Spring 1999
 - 30 day (minimum) comment period on form/function and any significant revisions from draft release
- Final model to be released second half 1999
- Later releases with new features

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Inventory News

- NONROAD vs. NEVES
 - National Inventory
 - VOC +25%
 - NO_x +25%
 - PM Down -5%

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Equipment Types

- Airport ground support
- Agricultural equipment
- Construction equipment
- Industrial and commercial equipment
- Recreational vehicles
- Residential and commercial lawn and garden equipment
- Logging equipment
- Recreational marine vessels
- Underground mining equipment
- Oil field equipment

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Emissions Estimates to be Added in Later Model Version

- Commercial marine
- Locomotive
- Aircraft

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Pollutants Reported

- Exhaust
 - HC
 - NO_x
 - CO
 - CO₂
 - SO_x
 - PM
- Non-exhaust HC by mode
 - Diurnal
 - Refueling
 - Crankcase

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Geographic Coverage

- National
 - 50 states
 - U.S. total
- State
- County
- Sub-county
- Non-attainment areas

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Temporal Coverage

- *Past, present, future year emissions*
- *Annual, seasonal, monthly, or daily emissions*
- *Daily emissions distinguished by season and weekday/weekend*

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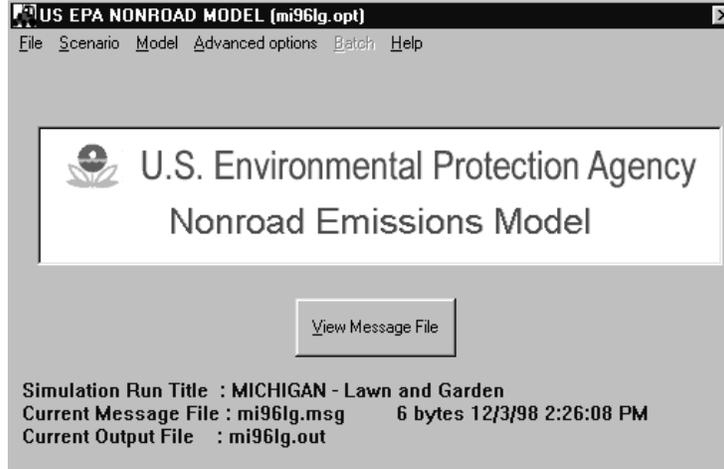
Model Structure

- *Graphical User Interface (Visual Basic)*
- *Core Model (Fortran)*
- *Reporting Utility (Microsoft Access)*

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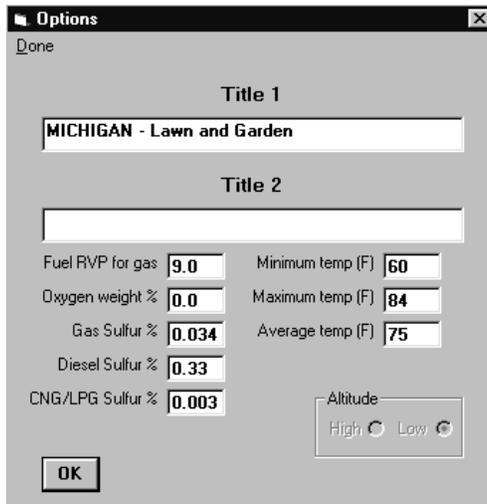
Graphical User Interface Example Screen



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Graphical User Interface Example Screen



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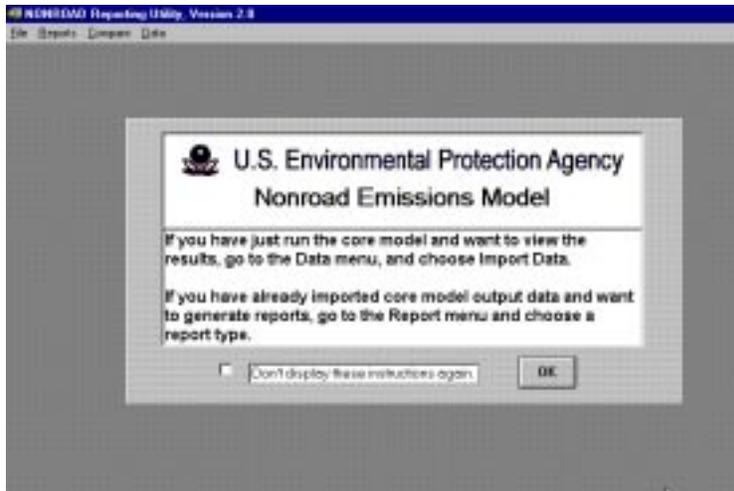
Graphical User Interface Example Screen



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Reporting Utility Example Screen



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Reporting Utility Example Screen

Report: Emission Totals by Source Classification

Database table to use: a test of ru and refuel

Decimal places to use: 2

Report all states/countries?

Report one state/county: Kent County

Pollutants to report: All Pollutants

Fuel Type: All Fuels

Select the HC: THC, TOG, NMOG, NMHC, VOC

Select the PM size: PM10, PM2.5

Run Cancel

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Reporting Utility Standardized Reports

- Emissions totals by:
 - County
 - Major Source Classification
 - Equipment Type/Code
 - Horsepower
- Population and Fuel Consumption by SCC and HP
- Comparison of Emissions by:
 - Major Source Classification
 - SCC
 - Horsepower Comparison of Population and Fuel Consumption by SCC

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General Calculation

- Multiply:
 - Equipment population
 - Average load factor
 - Activity in hours of use per year
 - Emission factor with *deterioration and/or new standards*
 - Average power level
- Temporally and geographically allocate emissions

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Model Inputs (defaults provided)

- Emission factors
- Emission deterioration factors
- Activity, load factors, and median engine life
- Base year equipment populations
- Growth factors indicators
- Scrappage function
- Geographic allocation indicators
- Temporal allocation factors

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Model Documentation

- Technical support documents on the Web
- User's Guide on the Web

<http://www.epa.gov/oms/nonrdmdl.htm>

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Major Revisions from Draft to Draft Final

Graphical User Interface

- Error checking of inputs
- RU now runs directly from GUI

Core model

- Model Speed up
- Revised refueling emissions
- Tank size based on average tank volume rather than gal/hp

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Major Revisions from Draft to Draft Final (continued)

Reporting Utility

- All emissions reports by fuel type
- Refueling vapor displacement and spillage reported separately
- Hot soak, resting and running losses no longer reported
- Additional reports

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Major Revisions from Draft to Draft Final (continued)

Default model inputs

- Linear instead of exponential growth in populations
- Revised geographic allocation indicators
- GSE populations based on aircraft LTO data
- Revised recreational marine inputs
 - annual activity
 - median lifetime
- Revised engine populations
 - 4-stroke motorcycles, ATVs, and lawnmowers
 - 2-stroke chainsaws, trimmers, and leafblowers
 - snowmobiles

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Major Revisions from Draft to Draft Final (concluded)

Default model inputs (concluded)

- Revised emission factors
 - small spark ignition engines
 - large spark ignition engines
- Revised emission standard phase-in schedules
 - compression ignition engines
 - small spark ignition engines
- Revised NO_x deterioration factors
 - inboard recreational marine
 - small spark ignition engines

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To Stay Informed: Electronic Information Sources

- Web site
 - <http://www.epa.gov/oms/nonrdmdl.htm>
- MOBILE list server
- E-mail
 - nonroad@epa.gov

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