National Park Service
U.S. Department of the Interior
Santa Monica Mountains National Recreation Area
California

Visitor Vehicle Air and Noise Emissions Study
Santa Monica Mountains National Recreation Area
Final Report

September 2005

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Acknowledgements

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1 INTRODUCTION

California's Santa Monica Mountains National Recreation Area (Santa Monica) began service of the ParkLINK shuttle system in July 2005. The shuttle gives access to 12 stops along a route in Los Angeles County including Malibu Canyon Road, Pacific Coast Highway (Route 1), Kanan Dume Road, and Mulholland Highway. Several of the stops are shared with the Los Angeles County Metropolitan Transit Authority (MTA) to facilitate regional connections for bus riders. The main goal of the ParkLINK shuttle program is to attract new visitors to the park while providing public transportation options for visitors without automobiles.

Santa Monica includes national park land, state park land, and private property. Several of the roads in this study are major commuter routes carrying a substantial amount of traffic not directly associated with the park. While the object of this paper is not to specifically investigate Los Angeles noise and air quality issues caused by vehicular traffic, it should be noted that Los Angeles County's smog and congestion problems are a major concern to local officials.

This study establishes the baseline air and noise emissions for Santa Monica before the implementation of shuttle service. The report consists of an Introduction, a section describing Santa Monica, a section on Air Emissions, a section on Noise Emissions, a Results section, a Conclusions and Recommendations section, and a References section. All input data for the air and noise emissions prediction models are presented in Appendix A, and all outputs for the air emissions prediction model are presented in Appendix B.

2 NATIONAL PARK DESCRIPTION

Santa Monica Mountains National Recreation Area (Santa Monica) is located approximately 15 miles west of downtown Los Angeles. The park encompasses over 154,000 acres and includes a variety of scenic and historic resources such as the Paramount Ranch. Figure 1 depicts the Backbone Trail. Figure 2 shows the ParkLINK shuttle route.

Figure 1. Backbone Trail

Figure 2. Santa Monica Mountains National Recreation Area ParkLINK shuttle route

3 AIR EMISSION FACTORS

3.1 MOBILE6

MOBILE Version 6.2 ("MOBILE6") is the latest version of the Environmental Protection Agency's (EPA) MOBILE-series vehicular emission factor modeling software [EPA]. Typically, states and various local/regional agencies use the model for developing vehicular emissions inventories as a requisite for state implementation plans and conformity analyses.

MOBILE6 was developed through emissions measurements using a Federal Test Procedure (FTP) driving cycle with a length of 7.5 miles and a speed averaged over one cycle of 19.6 miles per hour (mph). The basic emission rates derived from these measurements are modified within the model to account for changes in various scenario parameters.

MOBILE6 predicts emission factors (e.g., g/vehicle-mile) for several pollutants such as several hydrocarbon (HC) categories, including volatile organic compounds (VOC), carbon monoxide (CO), oxides of nitrogen (NOx), carbon dioxide (CO_2), and 2.5-micron particulate matter ($PM_{2.5}$). The model takes into account various parameters, including vehicle types, temperature, vehicle speeds, and inspection/maintenance (I/M) programs to generate current emission factors. In addition, future scenarios can also be modeled. A basic schematic of the inputs and outputs to the model are shown in Figure 3.

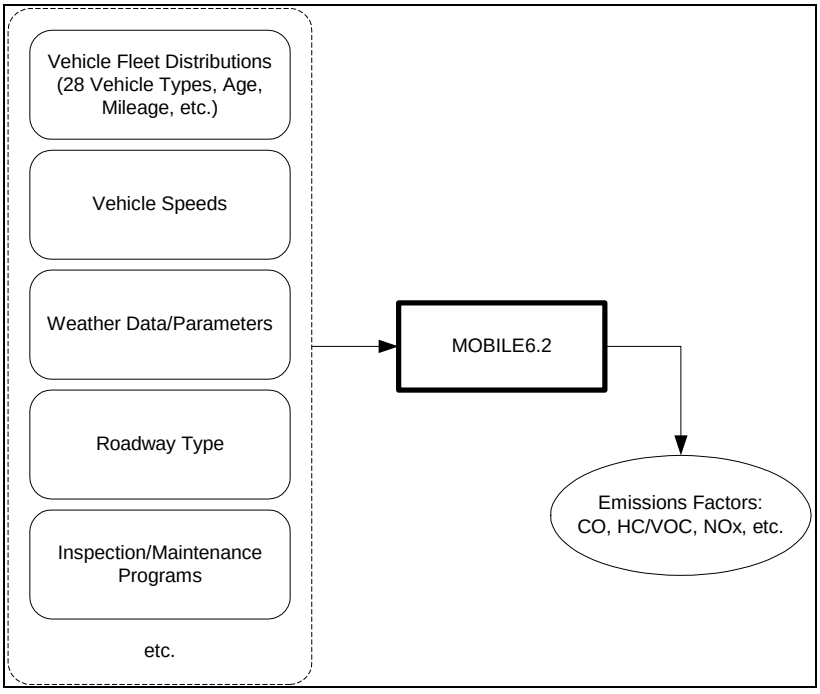

Figure 3. Schematic of the MOBILE6 inputs and outputs

The emission factors from the model are averages for a facility type and provided for up to 28 different vehicle types:

- 1 - LDGV Light-Duty Gasoline Vehicles (Passenger Cars)
- 2 - LDGT1 Light-Duty Gasoline Trucks 1 (0-6,000 lbs. GVWR, 0-3,750 lbs. LVW)
- 3 - LDGT2 Light-Duty Gasoline Trucks 2 (0-6,000 lbs. GVWR, 3,751-5,750 lbs. LVW)
- 4 - LDGT3 Light-Duty Gasoline Trucks 3 (6,001-8,500 lbs. GVWR, 0-5,750 lbs. ALVW)
- 5 - LDGT4 Light-Duty Gasoline Trucks 4 (6,001-8,500 lbs. GVWR, greater than 5,751 lbs. ALVW)
- 6 - HDGV2b Class 2b Heavy-Duty Gasoline Vehicles (8,501-10,000 lbs. GVWR)
- 7 - HDGV3 Class 3 Heavy-Duty Gasoline Vehicles (10,001-14,000 lbs. GVWR)
- 8 - HDGV4 Class 4 Heavy-Duty Gasoline Vehicles (14,001-16,000 lbs. GVWR)
- 9 - HDGV5 Class 5 Heavy-Duty Gasoline Vehicles (16,001-19,500 lbs. GVWR)
- 10 - HDGV6 Class 6 Heavy-Duty Gasoline Vehicles (19,501-26,000 lbs. GVWR)
- 11 - HDGV7 Class 7 Heavy-Duty Gasoline Vehicles (26,001-33,000 lbs. GVWR)
- 12 - HDGV8a Class 8a Heavy-Duty Gasoline Vehicles (33,001-60,000 lbs. GVWR)
- 13 - HDGV8b Class 8b Heavy-Duty Gasoline Vehicles (>60,000 lbs. GVWR)
- 14 - LDDV Light-Duty Diesel Vehicles (Passenger Cars)
- 15 - LDDT12 Light-Duty Diesel Trucks 1and 2 (0-6,000 lbs. GVWR)
- 16 - HDDV2b Class 2b Heavy-Duty Diesel Vehicles (8,501-10,000 lbs. GVWR)
- 17 - HDDV3 Class 3 Heavy-Duty Diesel Vehicles (10,001-14,000 lbs. GVWR)
- 18 - HDDV4 Class 4 Heavy-Duty Diesel Vehicles (14,001-16,000 lbs. GVWR)
- 19 - HDDV5 Class 5 Heavy-Duty Diesel Vehicles (16,001-19,500 lbs. GVWR)
- 20 - HDDV6 Class 6 Heavy-Duty Diesel Vehicles (19,501-26,000 lbs. GVWR)
- 21 - HDDV7 Class 7 Heavy-Duty Diesel Vehicles (26,001-33,000 lbs. GVWR)
- 22 - HDDV8a Class 8a Heavy-Duty Diesel Vehicles (33,001-60,000 lbs. GVWR)
- 23 - HDDV8b Class 8b Heavy-Duty Diesel Vehicles (>60,000 lbs. GVWR)
- 24 - MC Motorcycles (Gasoline)
- 25 - HDGB Gasoline Buses (School, Transit and Urban)
- 26 - HDDBT Diesel Transit and Urban Buses
- 27 - HDDBS Diesel School Buses
- 28 - LDDT34 Light-Duty Diesel Trucks 3 and 4 (6,001-8,500 lbs. GVWR)

3.2 Santa Monica Mountains National Recreation Area in MOBILE6.2

The Santa Monica Emissions Inventory was developed using emission factors modeled by MOBILE6.2. The pollutants modeled for the emissions inventory are CO, NOx, VOC's, SO_2, and PM_{10}. There were separate emission factors modeled representing the summer and winter conditions. Both of these seasons were modeled to take into account the difference in meteorological [NRCC] as well daylight [NAVY] conditions when modeling emission factors. The State of California also operates a vehicle inspection and maintenance program which was taken into account in modeling emission factors [EMFAC].

Emission factors were also modeled for weekday and weekend driving activity. A composite emission factor combining the the weekday and weekend emission factors was derived for the two seasons. The composite emission factor is defined as:

$$C_{EF} = [(WDA_{EF}*5) + (WEND_{EF}*2)]/7 \quad (2)$$

where

C_{EF} represents the composite emission factor,

WDA_{EF} represents the weekday emissions factor,

$WEND_{EF}$ represents the weekend emissions factor.

A complete list of inputs for each MOBILE6.2 run is presented in Appendix A.

4 NOISE EMISSIONS

4.1 TRAFFIC NOISE MODEL

In March 1998, the Federal Highway Administration (FHWA) released the Traffic Noise Model, Version 1.0 (FHWA TNM®). The current version, Version 2.5, was released in April 2004. TNM is an entirely new, state-of-the-art computer program used for predicting noise impacts in the vicinity of highways. It uses advances in personal computer hardware and software to improve upon the accuracy and ease of modeling highway noise, including the design of effective, cost-efficient highway noise barriers.

The main TNM output consists of L_{Aeq1h}, the A-weighted[1], energy equivalent sound level over a one-hour time period. L_{Aeq1h} has units of A-weighted decibels, or dBA.

TNM contains the following components:

- Modeling of five standard vehicle types, including automobiles, medium trucks, heavy trucks, buses, and motorcycles, as well as user-defined vehicles.
- Modeling of both constant-flow and interrupted-flow traffic using a 1994/1995 field-measured data base.
- Modeling of the effects of different pavement types, as well as the effects of graded roadways.
- Sound level computations based on a one-third octave-band data base and algorithms.
- Graphically interactive noise barrier design and optimization.
- Attenuation over/through rows of buildings and dense vegetation.
- Multiple diffraction analysis.
- Parallel barrier analysis.
- Contour analysis, including sound level contours, barrier insertion loss contours, and sound-level difference contours.

These components are supported by a scientifically founded and experimentally calibrated acoustic computation methodology, as well as a database made up of over 6,000 individual motor vehicle pass-by events measured at 40 sites across the US.

4.2 Santa Monica Mountains National Recreation Area in TNM

As modeled in TNM 2.5, Santa Monica features a variety of inputs, including roadways (Route 1 and Mulholland Drive), 11 location point receivers, terrain lines, a noise barrier[2], ground zones, and building rows. Analysis proves that the mountainous terrain

[1] Applying A-weighting to noise data involves adding empirically-derived coefficients to the third-octave bands within the spectral data to adjust for the sensitivity of human hearing.

[2] The single noise barrier included in the TNM Santa Monica analysis had no impact on the L_{Aeq1h} noise level results due to its shortness of height and distance from the roadway. It was only included to allow a contour analysis, which requires the presence of at least one TNM noise barrier. The writers of this report are not aware of any actual barriers that exist in the vicinity of Santa Monica Mountains National Recreation Area and therefore did not investigate any noise barrier impact predictions.

provides the area with many natural noise barriers. Input data for this analysis are based on historical traffic counts [NPS], recommended roadway speeds [NPS], and US Geological Survey map coordinates [USGS]. Since vehicle-type distribution information is not available for Santa Monica, vehicle-type distribution information from Pt. Reyes National Seashore, also in California [VOLPE], was used under the assumption that the Pt. Reyes vehicle distribution is similar to Santa Monica vehicle distribution information. This assumption is based on the tendency for newer passenger cars to dominate travel in both the park and the highways passing through the park.

In Figure 4, a view of Santa Monica as modeled in TNM is presented. A complete list of TNM inputs is presented in Appendix A.

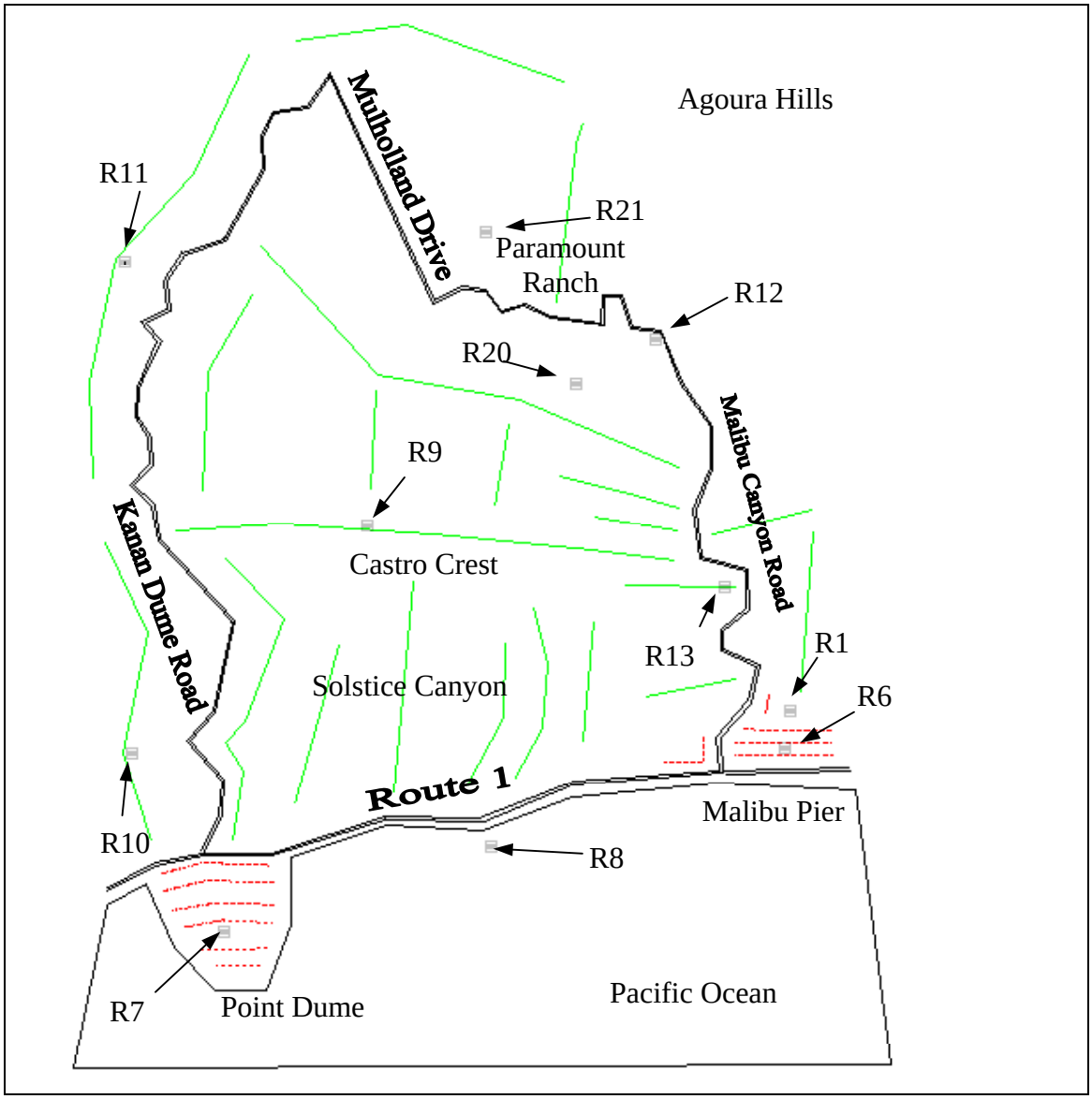

Figure 4. Santa Monica Mountains National Recreation Area as mapped in TNM

A location point analysis of 11 receiver locations (R1, R6, R7, R8, R9, R10, R11, R12, R13, R20, and R21 in Figure 4) was run in TNM, resulting in an L_{Aeq1h} sound level [FHWA] for each receiver location. L_{Aeq1h}, the A-weighted, energy equivalent sound level over a one-hour time period, is defined as:

$$L_{Aeq1h} = EL_i + A_{traff(i)} + A_d + A_s \quad (2)$$

where

EL_i represents the vehicle noise emission level for the ith vehicle type,

$A_{traff(i)}$ represents the adjustment for traffic flow, the vehicle volume and speed for the ith vehicle type,

A_d represents the adjustment for distance between the roadway and receiver and for the length of the roadway, and

A_s represents the adjustment for all shielding and ground effects between the roadway and the receiver.

The L_{Aeq1h} sound levels for the Santa Monica baseline are presented in the Results section below. An L_{Aeq1h} contour analysis of the Santa Monica baseline was also run; a map of this contour analysis is presented in the Results section.

5 RESULTS

The baseline emission factors generated for Santa Monica using MOBILE6.2 are presented in Tables 1 and 2 in Section 5.1. The baseline noise emission levels for Santa Monica using TNM are presented in Figures 5 through 8 in Section 5.2.

5.1 Air Quality Emissions

Results from the MOBILE6.2 emissions analysis are presented below. Results are based on historical traffic counts [LA DPW], recommended speeds [LA DPW], and US Geological Survey map coordinates [USGS]. The composite emission factors modeled by mobile for each season are presented in Table 1.

Table 1. MOBILE6.2 Summer and Winter Emission Factors

Vehicle Speed (mph)	Summer					Winter				
	CO (g/mi)	NOx (g/mi)	VOC (g/mi)	PM_{10} (g/mi)	SO_2 (g/mi)	CO (g/mi)	NOx (g/mi)	VOC (g/mi)	PM_{10} (g/mi)	SO_2 (g/mi)
50	12.640	2.093	0.845	0.062	0.069	17.019	2.299	1.041	0.063	0.069
55	13.160	2.253	0.824	0.062	0.069	17.500	2.418	1.020	0.063	0.069

The 2004 Emissions Inventory for study area is presented in Table 2 in units of tons per year. The study area is defined as the ParkLINK Shuttle Route spanding a total distance of 29 miles.

Table 2. 2004 Emission Inventory

CO	NOx	VOC	PM10	SO2
tons/year	tons/year	tons/year	tons/year	tons/year
4,840.8	**715.1**	**310.2**	**20.4**	**22.6**

5.2 Noise Emissions

Results from a TNM location point receiver analysis and a contour analysis are presented below. All results are in units of L_{Aeq1h}, the A-weighted, energy equivalent sound level over a one-hour time period. Results are based on historical traffic counts [LA DPW], recommended speeds [LA DPW], and US Geological Survey map coordinates [USGS].

5.2.1 Location Point Receiver Analysis

The following 11 Santa Monica receiver locations were analyzed in TNM:

R1 = Roadside location behind barrier wall
R6 = Malibu Pier area
R7 = Point Dume area

R8 = Pacific Ocean near California coast
R9 = Castro Crest
R10 = Zuma/Trancas Canyons
R11 = Rocky Oaks
R12 = Angeles District Headquarters
R13 = Malibu Canyon Road
R20 = Malibu Creek State Park
R21 = Paramount Ranch

The baseline L_{Aeq1h} results for each receiver are presented in Table 3.

Table 3. Location point receiver analysis results.

Receiver No.	Location Point Sound Level (L_{Aeq1h})
R1	51.1
R6	55.7
R7	47.5
R8	55.0
R9	25.4
R10	37.2
R11	34.9
R12	49.2
R13	46.3
R20	38.1
R21	37.0

These receiver locations were chosen for their proximity to points of interest for park visitors and to demonstrate the impact of terrain. Since these noise levels were modeled some distance away from the roadway, they are not particularly high. In fact, it is possible that many of the noise levels from modeled roadway traffic reported for the locations in Table 3 may not be perceptible at those locations due to the park's ambient noise at those locations[3]. However, as can be seen in the contour maps of Section 5.2.2, noise levels within 50 ft of Route 1 consistently rise as high as 65 dBA.

[3] The Volpe Center has collected ambient noise level data for several National Park units, including Badlands, an inland continental US park, and Haleakala, a park situated in the Hawaiian islands. Typical ambient noise levels were in the range of 35 – 45 dBA at Badlands [LEE1] and 35 – 50 dBA at Haleakala [LEE2].

5.2.2 Contour Analysis

In addition to a baseline contour analysis of Santa Monica Mountains National Recreation Area in its entirety in Figure 5, close-ups of Point Dume and Malibu Canyon Road are also presented in Figures 6 and 7. All results are in units of L_{Aeq1h}, the A-weighted, energy equivalent sound level over a one-hour time period.

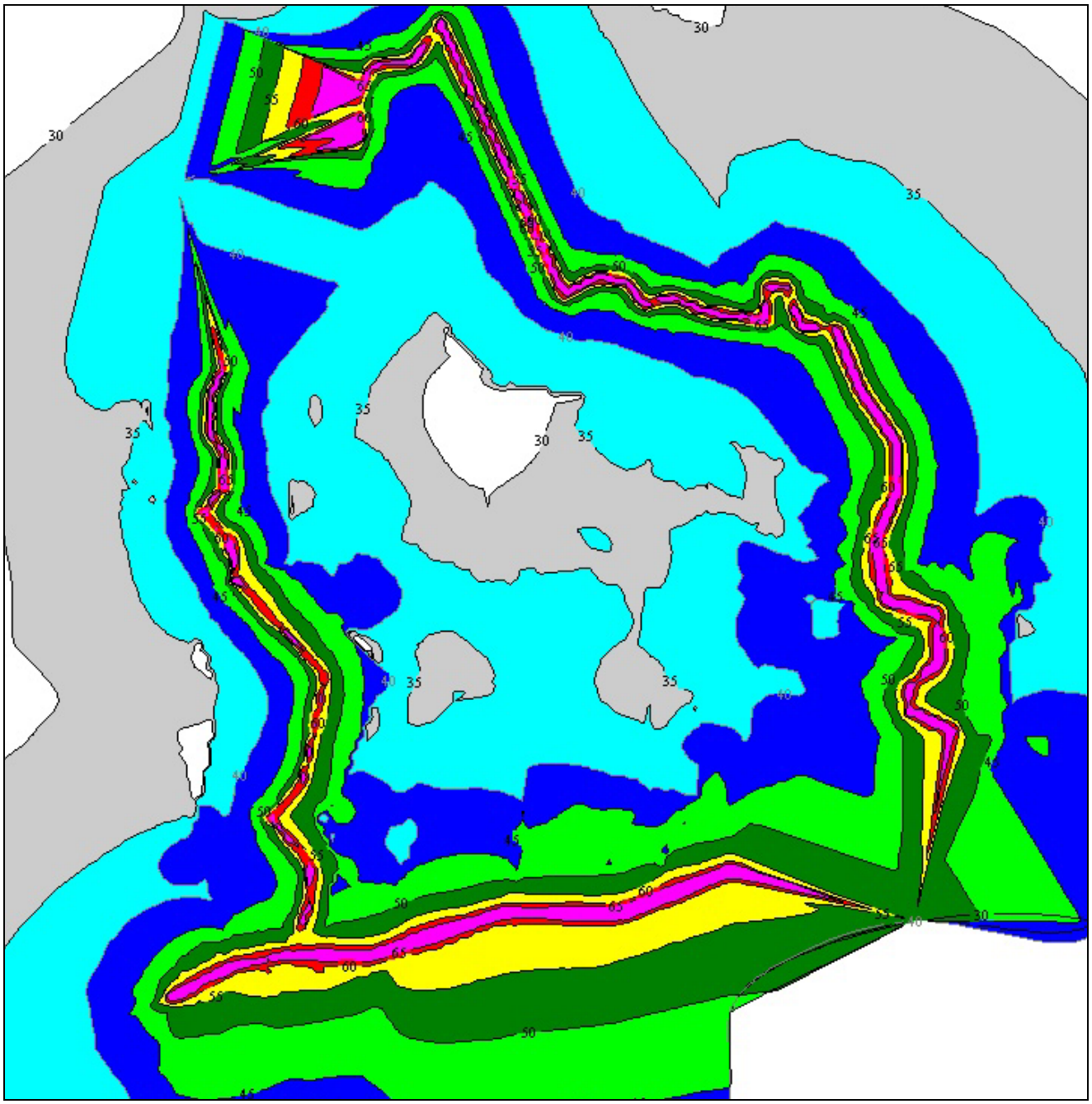

Figure 5. A baseline contour map of Santa Monica Mountains NRA, in L_{Aeq1h}

In the middle of Figure 5, notice the dramatic drop in noise levels as the sound energy hits the natural noise barriers in the mountainous terrain. This is in stark contrast to the propagation of sound energy over the acoustically hard surface of the Pacific Ocean, in the lower portion of the figure.

Table 4 shows the surface area of the earth inside each contour[4], in units of square miles.

Table 4. Surface area inside each contour.

L_{Aeq1h} (dBA)	Area (square miles)
30	92.964
35	71.773
40	45.233
45	27.962
50	15.337
55	7.285
60	3.337
65	1.760
70	0.682

Higher sound levels are concentrated inside smaller areas, whereas lower sound levels propagate out over larger areas, particularly over acoustically hard surfaces such as water. The highest sound levels occur in smaller areas on or near the roadway, as depicted in closeups of the contour map presented in Figures 6 and 7. Again, many of the noise levels from modeled roadway traffic may not be perceptible at locations away from the roadway due to the ambient noise in the park.

[4] Since the contours were cut off by a TNM processing boundary to save processing time, contours are left open. Using a wider processing boundary would have allowed for contours to enclose definitive areas, but TNM processing time would have increased exponentially.

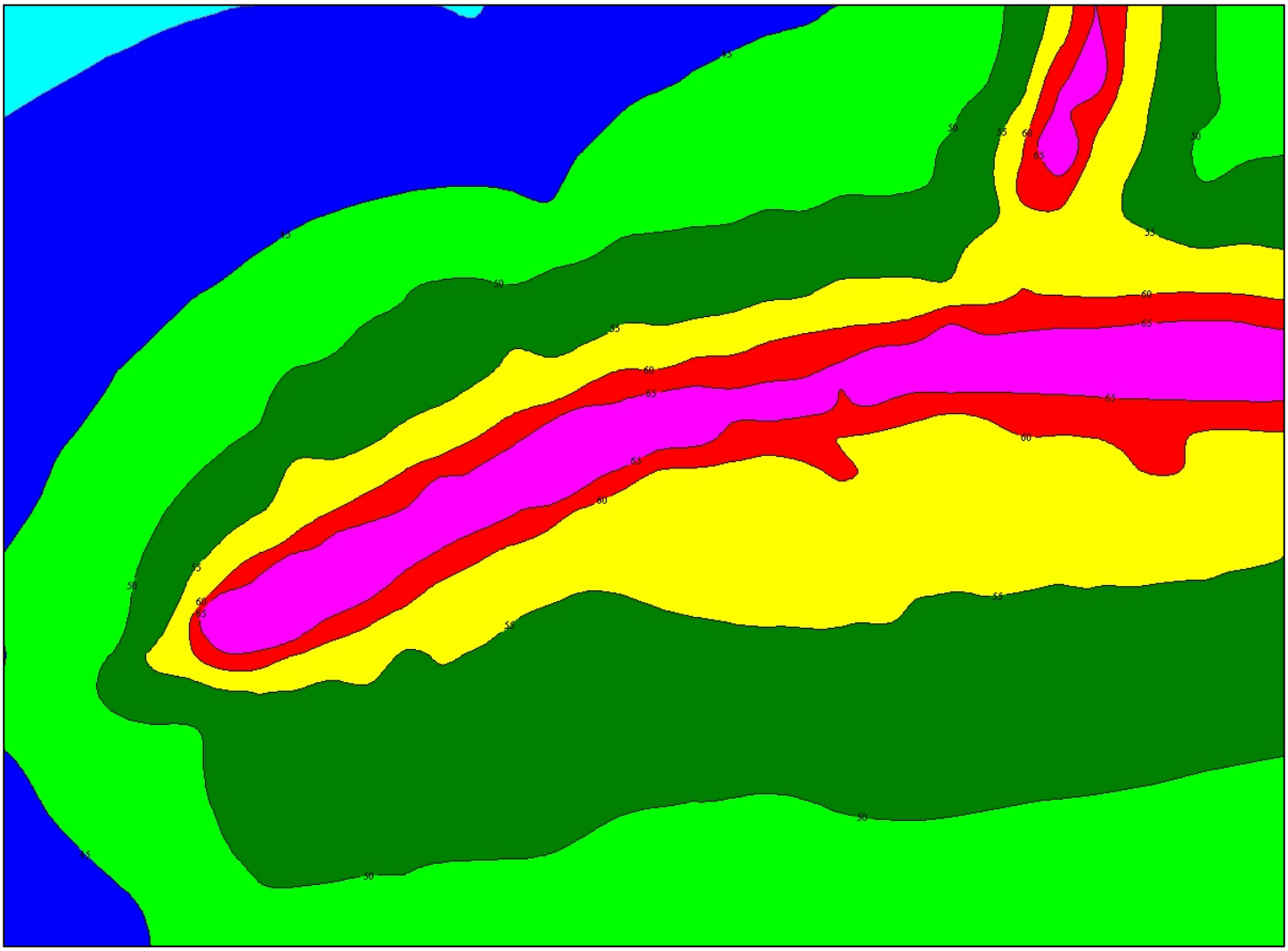

Figure 6. A baseline contour map of Point Dume, in L_{Aeq1h}

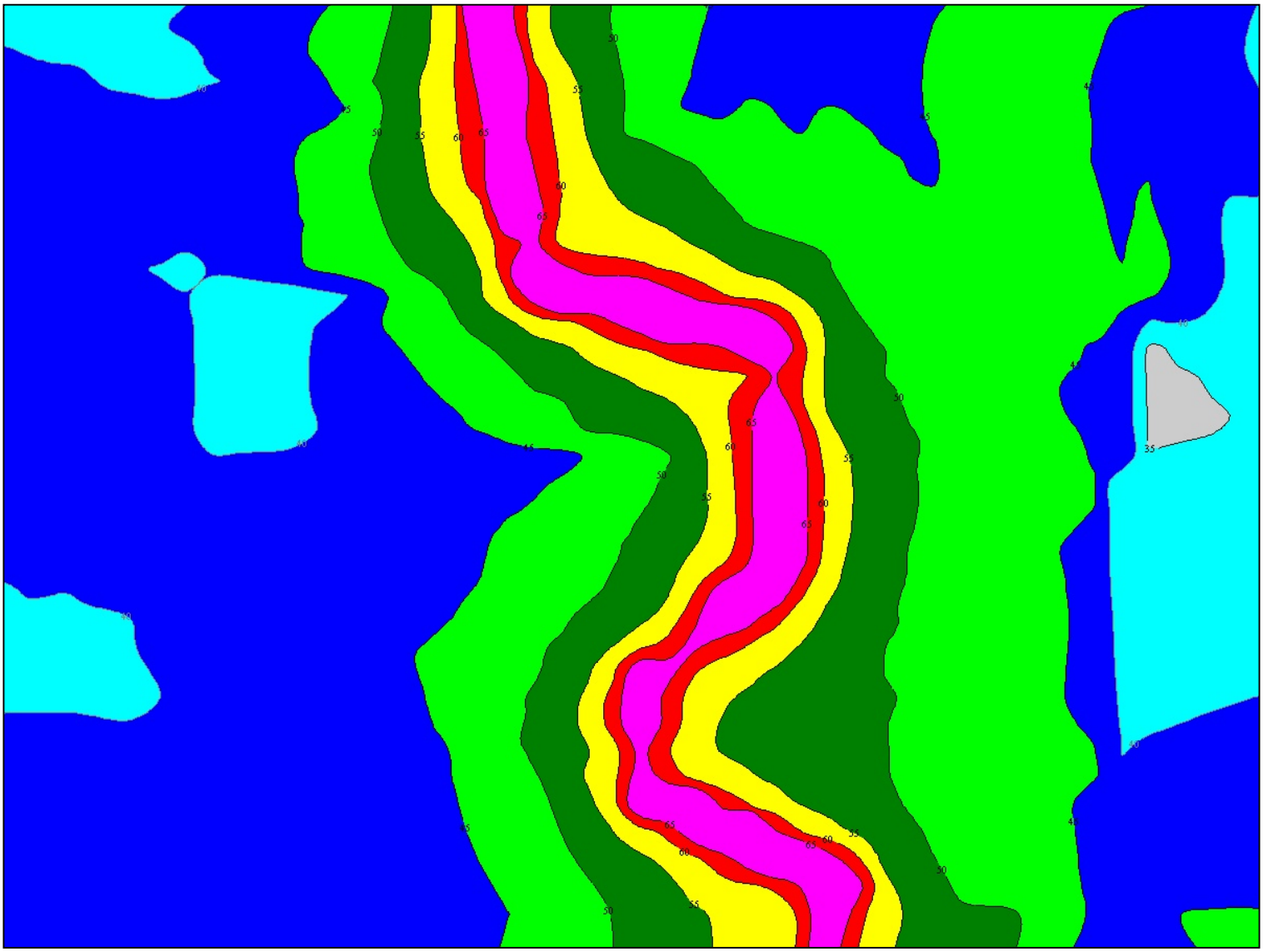

Figure 7. A baseline contour map of Malibu Canyon Road, in L_{Aeq1h}

6 CONCLUSIONS AND NEXT STEPS

6.1 Conclusions

AIR

Based on MOBILE6.2 results, vehicles traveling along the ParkLINK shuttle route produce annually 4,840.2 tons of CO, 715.1 tons of NOx, 310.2 tons of VOC's, 20.2 tons of PM_{10}, and 22.7 tons of SO_2. Note that passenger vehicles that use gasoline produce a higher amount of CO emissions, while vehicles using diesel fuel emit lower levels of CO compared to vehicles that use gasoline but produce a higher amount of NOx than gasoline-powered vehicles. High amounts of these emissions can lead to health problems.

NOISE

Based on the TNM results in this study, areas close to the roadway are hearing noise levels approaching 60 dBA – 65 dBA. However, these levels drop off quickly with increased distance away from the roadway. High exposure areas, including Malibu Pier and Point Dume, are hearing noise levels between 50 dBA and 55 dBA as a result of Route 1, and some areas near Mulholland Drive, such as Malibu Creek State Park and Paramount Ranch, are hearing noise levels above 40 dBA. After defining what noise levels are compatible with an enjoyable park experience, the NPS may want to consider whether Santa Monica Mountains National Recreation Area is too loud.

6.2 Next Steps

The foregoing report provided a baseline for air and noise emissions produced by all vehicles traveling along the ParkLINK shuttle route. Recommendations for assessing the air and noise impact of the shuttle include the following:

AIR

Given the high traffic volumes on these roads and the difficulties in performing precise traffic counts, the ParkLINK shuttle is not likely to lead to a significant reduction in measured traffic volumes. However, by measuring ridership, and by assessing what these riders would have done had the shuttle not been available, it is possible to estimate a shuttle-caused reduction in vehicle miles traveled. The impact of the shuttle would then be a combination of the following factors:

- Private vehicle miles forgone by riders who parked their vehicles in the area × private vehicle emissions per mile
- Private vehicle miles forgone by rides who reached Santa Monica NRA by public transit × private vehicle emissions per mile
- Emissions produced by the ParkLINK shuttle itself

The Santa Monica Mountains NRA air emissions analysis could be improved by using high-refinement, high-resolution data, gathered through a well-planned Santa Monica site survey, including actual traffic counts during weekday and weekend days in both summer and winter seasons. Vehicle-type information would also need to be collected in order to get a representative fleet mix of vehicles for Santa Monica area.

As NPS further investigates the ParkLINK shuttle service in Santa Monica, it should consider gathering more refined data to be used with MOBILE6.2 for modeling emissions in the park, particularly bus speed data and an accurate count of how many buses will be running and how many people will be using the bus. What rate at which bus use will be expected to grow should also be investigated for any examination of future conditions.

NOISE

Given the already existing high traffic volumes along most of the shuttle route, the ParkLINK shuttle is not likely to create a significant impact on noise on these roads. However, when the shuttle leaves the main road to enter a parking area, it may have a noticeable noise impact[5]. Therefore, a recommendation is to:

- Identify current noise-sensitive areas where the shuttle itself might have an impact
- Perform noise measurements, both when the shuttle is present and not present, and compare the noise levels

The Santa Monica noise emissions analysis could be improved by using high-refinement, high-resolution data, as would be gathered through a Santa Monica Mountains National Recreation Area site survey, including actual traffic counts, a geographic location study, and actual vehicle-type information. Furthermore, noise levels generated in TNM could be validated by setting up microphones at location points like those identified in Table 3 and comparing the results.

[5] What impact the shuttle will have in areas away from the roadway depends upon ambient noise levels in those areas. It would be useful to collect ambient noise level data for the park, particularly along the shuttle route, as part of any future noise modeling and analysis.

7 REFERENCES

Environmental Protection Agency [EPA]. "User's Guide to MOBILE6.1 and MOBILE6.2: Mobile Source Emission Factor Model." EPA Report No. EPA420-R-02-028. Assessment and Standards Division, Office of Transportation and Air Quality, Environmental Protection Agency. Washington, DC. October 2002.

Federal Highway Administration [FHWA]. "FHWA Traffic Noise Model ® Technical Manual." FHWA Report No. FHWA-PD-96-010. Office of Environment and Planning, Federal Highway Administration. Washington, DC. February 1998.

Volpe National Transportation Systems Center [VOLPE]. "Visitor Vehicle Emissions Study: Pt. Reyes National Seashore." DOT Report No. DOT-VNTSC-NPS-05-03. Environmental Measurement and Modeling Division, Volpe National Transportation Systems Center, Research and Innovative Technology Administration, Department of Transportation. Washington, DC. January 2005.

Lee, Cythia, et al. [LEE1]. "Baseline Ambient Sound Levels in Badlands National Park." Environmental Measurement and Modeling Division, Volpe National Transportation Systems Center, Research and Innovative Technology Administration, Department of Transportation. Washington, DC. September 2005.

Lee, Cythia, et al. [LEE2]. "Baseline Ambient Sound Levels in Haleakala National Park." Environmental Measurement and Modeling Division, Volpe National Transportation Systems Center, Research and Innovative Technology Administration, Department of Transportation. Washington, DC. July 2005.

California Air Resources Board (EMFAC). "EMFAC2001 Version 2.08 / EMFAC2002 Version 2.20 User's Guide." Sacramento,CA. September 2002.

Los Angeles Department of Public Works [LA DPW]. "Machine Count Traffic Volumes". Los Angeles, California. August 2005.

United States Geological Survey [USGS]. "National Map Viewer" at http://nmviewogc.cr.usgs.gov/viewer.htm. United States Geological Survey, Department of the Interior. Washington, DC. September 2005.

Northeast Regional Climate Center [NRCC]. "Comparative Climate Data for the United States". September 2005.

United States Naval Observatory [NAVY]. "Sun and Moon Data for One Day". aa.usno.navy.mil. September 2005.

National Park Service [NPS]. "Santa Monica Mountains National Recreational Area: General Management Plan Environmental Impact Statement, Volume 1." NPS Report

No. D-56A. National Park Service, Department of the Interior. Washington, DC. July 2002.

APPENDIX A INPUT FILES

Presented below are the main MOBILE6.2 and TNM input and external data files for the Santa Monica Mountains National Recreation Area modeling.

A.1 Air Emissions Input (MOBILE6.2)

A.1.1 Santa Monica Summer Weekday Input File

```
MOBILE6 INPUT FILE :

REPORT FILE         : SANTA MONICA_WDA.TXT
POLLUTANTS          : HC CO NOX CO2
DATABASE OUTPUT     :
WITH FIELDNAMES     :
DATABASE VEHICLES   : 22221 12111211 2 222 22222111 111
AGGREGATED OUTPUT   :
EMISSIONS TABLE     : SANTA MONICA_WDA.TB1
PARTICULATES        :

RUN DATA

NO REFUELING        :

CLOUD COVER         : 0.60

PEAK SUN            : 12 2

SUNRISE/SUNSET      : 6 8

ABSOLUTE HUMIDITY   : 92.9

STAGE II REFUELING : 89 5 100. 99.

FUEL PROGRAM        : 2 N

SEASON              : 1

I/M PROGRAM         : 1 1974 2040 2 T/O 2500/IDLE

I/M STRINGENCY      : 1 31.0

I/M MODEL YEARS     : 1 1965 2004

I/M VEHICLES        : 1 22222 22222222 1

I/M COMPLIANCE      : 1 86.0

I/M WAIVER RATES    : 1 1.0 1.0

I/M GRACE PERIOD    : 1  4

I/M PROGRAM         : 2 1974 2040 2 T/O GC

I/M MODEL YEARS     : 2 1965 2004

I/M VEHICLES        : 2 22222 22222222 1

I/M COMPLIANCE      : 2 86.0

I/M WAIVER RATES    : 2 1.0 1.0

I/M GRACE PERIOD    : 2  4


SCENARIO REC        : SANTA MONICA WEEKDAY SEGMENT 1-4

EVALUATION MONTH    : 7

FUEL RVP            : 6.8

MIN/MAX TEMPERATURE: 60. 73.

AVERAGE SPEED       : 50.0 ARTERIAL

PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV

PARTICLE SIZE       : 10.0

DIESEL SULFUR       : 500.0

CALENDAR YEAR       : 2004

SCENARIO REC        : SANTA MONICA WEEKDAY SEGMENT 5

EVALUATION MONTH    : 7

FUEL RVP            : 6.8

MIN/MAX TEMPERATURE: 60. 73.

AVERAGE SPEED       : 55.0 ARTERIAL

PARTICULATE EF      : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV

PARTICLE SIZE       : 10.0

DIESEL SULFUR       : 500.0

CALENDAR YEAR       : 2004

SCENARIO REC        : SANTA MONICA WEEKDAY SEGMENT 7-9

EVALUATION MONTH    : 7

FUEL RVP            : 6.8

MIN/MAX TEMPERATURE: 60. 73.

AVERAGE SPEED       : 50.0 ARTERIAL
```

```
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

END OF RUN
```

A.1.2 Santa Monica Summer Weekend Input File

```
MOBILE6 INPUT FILE :

REPORT FILE        : SANTA MONICA_WEND.TXT
POLLUTANTS         : HC CO NOX CO2
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE VEHICLES  : 22221 12111211 2 222 22222111 111
AGGREGATED OUTPUT  :
EMISSIONS TABLE    : SANTA MONICA_WEND.TB1
PARTICULATES       :

RUN DATA

NO REFUELING       :

CLOUD COVER        : 0.60

PEAK SUN           : 12 2

SUNRISE/SUNSET     : 6 8

ABSOLUTE HUMIDITY  : 92.9

STAGE II REFUELING : 89 5 100. 99.

FUEL PROGRAM       : 2 N

SEASON             : 1

I/M PROGRAM        : 1 1974 2040 2 T/O 2500/IDLE

I/M STRINGENCY     : 1 31.0

I/M MODEL YEARS    : 1 1965 2004

I/M VEHICLES       : 1 22222 22222222 1

I/M COMPLIANCE     : 1 86.0

I/M WAIVER RATES   : 1 1.0 1.0

I/M GRACE PERIOD   : 1  4

I/M PROGRAM        : 2 1974 2040 2 T/O GC

I/M MODEL YEARS    : 2 1965 2004

I/M VEHICLES       : 2 22222 22222222 1

I/M COMPLIANCE     : 2 86.0

I/M WAIVER RATES   : 2 1.0 1.0

I/M GRACE PERIOD   : 2  4


SCENARIO REC       : SANTA MONICA WEEKEND SEGMENT 1-4

WE VEH US          :

EVALUATION MONTH   : 7

FUEL RVP           : 6.8

MIN/MAX TEMPERATURE: 60. 73.

AVERAGE SPEED      : 50.0 ARTERIAL

PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV

PARTICLE SIZE      : 10.0

DIESEL SULFUR      : 500.0

CALENDAR YEAR      : 2004

SCENARIO REC       : SANTA MONICA WEEKEND SEGMENT 5

WE VEH US          :

EVALUATION MONTH   : 7

FUEL RVP           : 6.8

MIN/MAX TEMPERATURE: 60. 73.

AVERAGE SPEED      : 55.0 ARTERIAL

PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV

PARTICLE SIZE      : 10.0

DIESEL SULFUR      : 500.0

CALENDAR YEAR      : 2004
```

```
SCENARIO REC       : SANTA MONICA WEEKEND SEGMENT 7-9
WE VEH US          :
EVALUATION MONTH   : 7
FUEL RVP           : 6.8
MIN/MAX TEMPERATURE: 60. 73.
AVERAGE SPEED      : 50.0 ARTERIAL
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

END OF RUN
```

A.1.3 Santa Monica Winter Weekday Input File

```
MOBILE6 INPUT FILE :

REPORT FILE        : SANTA MONICA_WDAY.TXT
POLLUTANTS         : HC CO NOX CO2
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE VEHICLES  : 22221 12111211 2 222 22222111 111
AGGREGATED OUTPUT  :
EMISSIONS TABLE    : SANTA MONICA_WDAY.TB1
PARTICULATES       :

RUN DATA

NO REFUELING       :
CLOUD COVER        : 0.56
PEAK SUN           : 11 1
SUNRISE/SUNSET     : 7 5
ABSOLUTE HUMIDITY  : 70.2
STAGE II REFUELING : 89 5 100. 99.
FUEL PROGRAM       : 2 N
SEASON             : 2
I/M PROGRAM        : 1 1974 2040 2 T/O 2500/IDLE
I/M STRINGENCY     : 1 31.0
I/M MODEL YEARS    : 1 1965 2004
I/M VEHICLES       : 1 22222 22222222 1
I/M COMPLIANCE     : 1 86.0
I/M WAIVER RATES   : 1 1.0 1.0
I/M GRACE PERIOD   : 1  4
I/M PROGRAM        : 2 1974 2040 2 T/O GC
I/M MODEL YEARS    : 2 1965 2004
I/M VEHICLES       : 2 22222 22222222 1
I/M COMPLIANCE     : 2 86.0
I/M WAIVER RATES   : 2 1.0 1.0
I/M GRACE PERIOD   : 2  4

SCENARIO REC       : SANTA MONICA WINTER WEEKDAY SEGMENT 1-4
EVALUATION MONTH   : 1
FUEL RVP           : 10.4
MIN/MAX TEMPERATURE: 51. 68.
AVERAGE SPEED      : 50.0 ARTERIAL
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

SCENARIO REC       : SANTA MONICA WINTER WEEKDAY SEGMENT 5
EVALUATION MONTH   : 1
FUEL RVP           : 10.4
MIN/MAX TEMPERATURE: 51. 68.
AVERAGE SPEED      : 55.0 ARTERIAL
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
```

```
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

SCENARIO REC       : SANTA MONICA WINTER WEEKDAY SEGMENT 7-9
EVALUATION MONTH   : 1
FUEL RVP           : 10.4
MIN/MAX TEMPERATURE: 51. 68.
AVERAGE SPEED      : 50.0 ARTERIAL
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004


END OF RUN
```

A.1.4 Santa Monica Winter Weekend Input File

```
MOBILE6 INPUT FILE :

REPORT FILE        : SANTA MONICA_WEND.TXT
POLLUTANTS         : HC CO NOX CO2
DATABASE OUTPUT    :
WITH FIELDNAMES    :
DATABASE VEHICLES  : 22221 12111211 2 222 22222111 111
AGGREGATED OUTPUT  :
EMISSIONS TABLE    : SANTA MONICA_WEND.TB1
PARTICULATES       :

RUN DATA

NO REFUELING       :
CLOUD COVER        : 0.60
PEAK SUN           : 12 2
SUNRISE/SUNSET     : 6 8
ABSOLUTE HUMIDITY  : 92.9
STAGE II REFUELING : 89 5 100. 99.
FUEL PROGRAM       : 2 N
SEASON             : 1
I/M PROGRAM        : 1 1974 2040 2 T/O 2500/IDLE
I/M STRINGENCY     : 1 31.0
I/M MODEL YEARS    : 1 1965 2004
I/M VEHICLES       : 1 22222 22222222 1
I/M COMPLIANCE     : 1 86.0
I/M WAIVER RATES   : 1 1.0 1.0
I/M GRACE PERIOD   : 1  4
I/M PROGRAM        : 2 1974 2040 2 T/O GC
I/M MODEL YEARS    : 2 1965 2004
I/M VEHICLES       : 2 22222 22222222 1
I/M COMPLIANCE     : 2 86.0
I/M WAIVER RATES   : 2 1.0 1.0
I/M GRACE PERIOD   : 2  4


SCENARIO REC       : SANTA MONICA WEEKEND SEGMENT 1-4
WE VEH US          :
EVALUATION MONTH   : 7
FUEL RVP           : 6.8
MIN/MAX TEMPERATURE: 60. 73.
AVERAGE SPEED      : 50.0 ARTERIAL
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

SCENARIO REC       : SANTA MONICA WEEKEND SEGMENT 5
WE VEH US          :
EVALUATION MONTH   : 7
FUEL RVP           : 6.8
MIN/MAX TEMPERATURE: 60. 73.
AVERAGE SPEED      : 55.0 ARTERIAL
```

```
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

SCENARIO REC       : SANTA MONICA WEEKEND SEGMENT 7-9
WE VEH US          :
EVALUATION MONTH   : 7
FUEL RVP           : 6.8
MIN/MAX TEMPERATURE: 60. 73.
AVERAGE SPEED      : 50.0 ARTERIAL
PARTICULATE EF     : PMGZML.CSV PMGDR1.CSV PMGDR2.CSV PMDZML.CSV Pmddr1.CSV Pmddr2.CSV
PARTICLE SIZE      : 10.0
DIESEL SULFUR      : 500.0
CALENDAR YEAR      : 2004

END OF RUN
```

A.2 Noise Emissions Input (TNM)

ROADWAYS

Table A-1. Santa Monica TNM baseline roadway input

Roadway Name	Width	Point Name	Point #	X (ft)	Y (ft)	Z (ft)	Pavement Type
Roadway1	12	point1	1	0.0	0.0	149.0	Average
		point86	86	1028.8	2180.7	333.0	Average
		point87	87	1178.8	4190.9	417.0	Average
		point88	88	-815.1	6486.9	496.0	Average
		point89	89	621.3	8068.4	742.0	Average
		point90	90	1771.8	13365.9	1087.0	Average
		point91	91	-2509.0	18091.8	1473.0	Average
		point2	2	-2787.8	20102.0	1868.0	Average
		point76	76	-4002.6	21269.1	1751.0	Average
		point77	77	-2930.6	22436.2	1830.0	Average
		point78	78	-3002.0	24032.0	1722.0	Average
		point79	79	-3788.0	25199.1	1753.0	Average
		point80	80	-3716.5	26795.0	1750.0	Average
		point81	81	-3216.1	27962.1	1750.0	Average
		point82	82	-2430.0	29557.9	1750.0	Average
		point3	3	-3358.9	30582.1	1750.0	Average
		point75	75	-1871.0	31285.0	1654.0	Average
		point68	68	-2098.3	32988.4	1599.0	Average
		point69	69	-1123.6	34537.1	1426.0	Average
		point70	70	1280.4	35371.1	1229.0	Average
		point71	71	3541.5	39492.6	1251.0	Average
		point72	72	3372.8	41327.1	1004.0	Average
		point73	73	4061.7	42732.9	952.0	Average
		point74	74	6036.9	42995.2	985.0	Average

		point4	4	7297.5	44829.8	785.0	Average
		point5	5	13207.6	31685.5	770.0	Average
		point59	59	14950.6	32522.8	758.0	Average
		point60	60	16264.9	32359.6	779.0	Average
		point61	61	17150.4	31195.9	774.0	Average
		point62	62	18464.6	31604.5	833.0	Average
		point63	63	20064.8	30869.6	880.0	Average
		point64	64	23094.2	30420.5	883.0	Average
		point65	65	23122.1	32115.4	772.0	Average
		point66	66	24007.5	32095.2	710.0	Average
		point67	67	24607.2	30216.8	887.0	Average
		point6	6	26350.2	30053.6	621.0	Average
		point47	47	27501.7	27117.6	601.0	Average
		point48	48	29224.9	24610.3	606.0	Average
		point49	49	29232.9	22246.0	533.0	Average
		point50	50	28240.5	19881.7	574.0	Average
		point51	51	28677.3	16945.6	377.0	Average
		point52	52	31258.1	16296.5	377.0	Average
		point53	53	31266.1	14075.1	724.0	Average
		point54	54	29844.9	12854.2	456.0	Average
		point55	55	29852.9	11633.3	296.0	Average
		point56	56	31862.0	10698.2	295.0	Average
		point57	57	31441.3	8762.7	277.0	Average
		point58	58	29591.2	6684.2	186.0	Average
		point7	7	29742.2	4748.7	290.0	Average
		point93	93	21354.0	4074.8	167.0	Average
		point94	94	15824.3	1971.6	185.0	Average
		point95	95	10437.6	2012.4	16.0	Average
		point96	96	3907.4	-90.8	5.0	Average
		point8	8	-50.0	-50.0	132.0	Average
		point92	92	-2875.4	-652.1	131.0	Average
		point9	9	-5700.9	-2111.7	149.0	Average
Roadway6	12	point45	45	30032.3	4728.7	177.0	Average
		point46	46	37382.7	4902.5	26.0	Average
Roadway7	12	point97	97	-5602.5	-2228.3	149.0	Average
		point98	98	-2814.1	-773.4	131.0	Average
		point99	99	-27.4	-177.7	132.0	Average
		point100	100	3925.9	-225.6	5.0	Average
		point101	101	10455.2	1894.4	16.0	Average
		point102	102	16124.5	1749.7	185.0	Average
		point103	103	21315.7	3870.8	167.0	Average
		point104	104	29921.5	4562.6	290.0	Average
		point105	105	29868.6	6602.2	186.0	Average
		point106	106	31599.5	8633.3	277.0	Average

point107	107	32065.5	10800.1	295.0	Average
point108	108	30004.4	11717.7	296.0	Average
point109	109	29974.4	12815.4	456.0	Average
point110	110	31463.8	13988.8	724.0	Average
point111	111	31433.7	16404.3	377.0	Average
point112	112	28778.1	17081.9	377.0	Average
point113	113	28402.2	19834.7	574.0	Average
point114	114	29372.7	22195.8	533.0	Average
point115	115	29369.9	24662.6	606.0	Average
point116	116	27625.0	27235.3	601.0	Average
point117	117	26420.2	30182.1	621.0	Average
point118	118	24722.3	30350.0	887.0	Average
point119	119	24089.3	32230.2	710.0	Average
point120	120	23014.9	32225.4	772.0	Average
point121	121	22941.0	30579.3	883.0	Average
point122	122	20096.8	31003.3	880.0	Average
point123	123	18519.8	31719.8	833.0	Average
point124	124	17186.4	31316.0	774.0	Average
point125	125	16294.3	32496.9	779.0	Average
point126	126	14947.8	32675.8	758.0	Average
point127	127	13332.4	31934.5	770.0	Average
point128	128	7327.2	45050.4	785.0	Average
point129	129	5973.6	43110.8	985.0	Average
point130	130	3985.4	42869.2	952.0	Average
point131	131	3272.2	41391.3	1004.0	Average
point132	132	3369.4	39543.2	1251.0	Average
point133	133	1156.8	35514.4	1229.0	Average
point134	134	-1303.0	34693.4	1426.0	Average
point135	135	-2340.0	33021.4	1599.0	Average
point136	136	-2094.0	31372.8	1654.0	Average
point137	137	-3589.8	30654.8	1750.0	Average
point138	138	-2699.0	29514.7	1750.0	Average
point139	139	-3845.8	26868.8	1750.0	Average
point140	140	-3918.9	25123.7	1750.0	Average
point141	141	-3204.2	23980.3	1753.0	Average
point142	142	-3167.7	22507.8	1722.0	Average
point143	143	-4267.9	21221.4	1830.0	Average
point144	144	-2988.2	20087.9	1751.0	Average
point145	145	-2625.9	17970.6	1868.0	Average
point146	146	1625.4	13327.1	1473.0	Average
point147	147	522.9	8155.9	1087.0	Average
point148	148	-999.7	6488.7	742.0	Average
point149	149	999.6	4107.7	496.0	Average
point150	150	856.7	2201.7	417.0	Average

		point151	151	-191.8	33.7	333.0	Average
Roadway8	12	point152	152	37338.1	4705.5	26.0	Average
		point153	153	30040.1	4532.6	177.0	Average

GROUND ZONES

Table A-2. Santa Monica TNM baseline ground zone input

Ground Zone Name	Type	Flow Resistivity (cgs rayls)	Point #	X (ft)	Y(ft)
Ground Zone 2	Water	20000	1	37643.8	3557.7
			2	29645.1	3944.7
			3	21259.4	3170.7
			4	16098.9	1235.5
			5	10551.4	1493.5
			6	5004.0	-312.6
			7	5004.0	-4182.9
			8	3584.9	-7924.3
			9	617.6	-7924.3
			10	-1704.6	-5473.1
			11	-3381.7	-1860.7
			12	-5574.9	-3021.8
			13	-7510.1	-12439.7
			14	39707.9	-12310.6

TERRAIN LINES

Table A-3. Santa Monica TNM baseline terrain line input

Terrain Line Name	Point #	X (ft)	Y (ft)	Z (ft)
Terrain Line1	1	-1575.6	18652.0	1986.0
	2	4487.9	19039.0	2486.0
	3	13260.7	18394.0	2056.0
	4	22420.5	17490.9	2081.0
	5	27193.9	16845.8	1943.0
Terrain Line2	6	27451.9	19942.1	677.0
	7	24226.6	20845.2	891.0
	8	20485.3	21748.3	1406.0
Terrain Line3	9	27322.9	18652.0	790.0
	10	22549.5	19426.1	1479.0
Terrain Line4	11	30677.2	15297.7	697.0
	12	24226.6	15426.7	1103.0
Terrain Line5	13	29387.1	18394.0	993.0

	14	35192.5	19813.1	1295.0
Terrain Line6	15	35192.5	18523.0	2402.0
	16	34418.5	9234.2	702.0
Terrain Line7	17	30677.2	10008.3	480.0
	18	25516.7	8976.2	1020.0
Terrain Line12	35	1262.7	16974.9	1537.0
	36	4616.9	13491.6	1374.0
	37	2423.8	7557.1	1379.0
	38	1262.7	6396.0	840.0
	39	2294.7	4718.8	791.0
	40	1649.7	590.5	275.0
Terrain Line13	41	12099.6	15684.7	1921.0
	42	10938.5	3428.7	922.0
Terrain Line15	52	7842.2	11943.4	1085.0
	53	5262.0	2783.6	527.0
Terrain Line16	54	19066.2	14136.6	1303.0
	55	19840.2	10911.3	1044.0
	56	19582.2	7170.0	769.0
	57	17905.1	4202.8	466.0
Terrain Line18	65	17389.0	12072.4	710.0
	66	17260.0	7815.1	726.0
	67	15195.8	3815.7	255.0
Terrain Line19	68	27451.9	22264.3	1180.0
	69	18163.1	26134.6	935.0
	70	10035.4	27553.8	1181.0
	71	3197.8	35165.4	1287.0
Terrain Line20	72	17647.1	24715.5	1422.0
	73	16744.0	20071.1	1835.0
Terrain Line21	74	9906.4	26650.7	973.0
	75	9648.4	20974.2	1909.0
Terrain Line22	76	2810.8	32198.2	1532.0
	77	230.6	27811.8	1344.0
	78	-27.5	20845.2	1969.0
Terrain Line23	79	2552.8	46131.3	1170.0
	80	-543.5	39293.8	1277.0
	81	-5058.9	34391.3	1145.0
	82	-6607.0	27166.7	1521.0
	83	-6349.0	21619.3	1821.0
Terrain Line24	84	-5703.9	17877.9	1791.0
	85	-3252.7	12717.5	1615.0
	86	-4671.9	5750.9	1637.0
	87	-2994.7	590.5	631.0
Terrain Line25	88	20356.3	31811.1	1067.0
	89	21517.4	40841.9	1168.0

	90	21517.4	40970.9	1030.0
	91	21904.4	42261.0	946.0
Terrain Line26	92	20743.3	44583.2	856.0
	93	11712.5	47808.5	1246.0
	94	5262.0	46905.4	1207.0
Terrain Line28	98	21861.8	6491.2	256.0
	99	22526.7	13362.3	1714.0

RECEIVERS

Table A-4. Santa Monica TNM baseline receiver input

Receiver Name	Point #	X (ft)	Y (ft)	Z (ft)	Height Above Ground (ft)	Active in Calculation?
Receiver1	1	33884.3	8195.6	0.0	4.92	Y
Receiver6	6	33525.0	6031.8	0.0	4.92	Y
Receiver7	7	1167.5	-4595.4	0.0	4.92	Y
Receiver8	8	16553.2	321.7	0.0	4.92	Y
Receiver9	9	9415.5	18879.7	0.0	4.92	Y
Receiver10	10	-4225.5	5714.6	0.0	4.92	Y
Receiver11	11	-4542.7	34106.7	0.0	4.92	Y
Receiver12	12	26070.1	29665.5	0.0	4.92	Y
Receiver13	13	30035.5	15390.1	0.0	4.92	Y
Receiver20	20	21470.2	27127.7	0.0	4.92	Y
Receiver21	21	16235.9	35851.5	0.0	4.92	Y

BARRIER

Table A-5. Santa Monica TNM baseline barrier input

Barrier Name	Barrier Type	Point Name	Point #	X (ft)	Y (ft)	Z (ft)
Barrier2	W	point7	7	32592.6	9089.8	0.0
		point8	8	32393.9	7996.8	0.0

* W denotes a wall barrier.

TRAFFIC

Table A-6. Santa Monica TNM baseline traffic input

Roadway Name	Point Name	Point #	Autos, Veh./hr	Speed, mph	Medium Trucks, Veh./hr	Speed, mph	Heavy Trucks, Veh./hr	Speed, mph	Motorcycles, Veh./hr	Speed, mph
Roadway1	point1	1	580	50	112	50	5	50	1	50
	point86	86	580	50	112	50	5	50	1	50

point87	87	580	50	112	50	5	50	1	50
point88	88	580	50	112	50	5	50	1	50
point89	89	580	50	112	50	5	50	1	50
point90	90	580	50	112	50	5	50	1	50
point91	91	580	50	112	50	5	50	1	50
point2	2	352	50	68	50	3	50	1	50
point76	76	352	50	68	50	3	50	1	50
point77	77	352	50	68	50	3	50	1	50
point78	78	352	50	68	50	3	50	1	50
point79	79	352	50	68	50	3	50	1	50
point80	80	352	50	68	50	3	50	1	50
point81	81	352	50	68	50	3	50	1	50
point82	82	352	50	68	50	3	50	1	50
point3	3	424	55	82	55	4	55	1	55
point75	75	424	55	82	55	4	55	1	55
point68	68	424	55	82	55	4	55	1	55
point69	69	424	55	82	55	4	55	1	55
point70	70	424	55	82	55	4	55	1	55
point71	71	424	55	82	55	4	55	1	55
point72	72	424	55	82	55	4	55	1	55
point73	73	424	55	82	55	4	55	1	55
point74	74	424	55	82	55	4	55	1	55
point4	4	424	55	82	55	4	55	1	55
point5	5	424	55	82	55	4	55	1	55
point59	59	424	55	82	55	4	55	1	55
point60	60	424	55	82	55	4	55	1	55
point61	61	424	55	82	55	4	55	1	55
point62	62	424	55	82	55	4	55	1	55
point63	63	424	55	82	55	4	55	1	55
point64	64	424	55	82	55	4	55	1	55
point65	65	424	55	82	55	4	55	1	55
point66	66	424	55	82	55	4	55	1	55
point67	67	424	55	82	55	4	55	1	55
point6	6	1263	50	244	50	11	50	2	50
point47	47	1263	50	244	50	11	50	2	50
point48	48	1263	50	244	50	11	50	2	50
point49	49	1263	50	244	50	11	50	2	50
point50	50	1263	50	244	50	11	50	2	50
point51	51	1263	50	244	50	11	50	2	50
point52	52	1263	50	244	50	11	50	2	50
point53	53	1263	50	244	50	11	50	2	50
point54	54	1263	50	244	50	11	50	2	50
point55	55	1263	50	244	50	11	50	2	50
point56	56	1263	50	244	50	11	50	2	50

	point57	57	1263	50	244	50	11	50	2	50
	point58	58	1263	50	244	50	11	50	2	50
	point7	7	3197	50	619	50	29	50	6	50
	point93	93	3197	50	619	50	29	50	6	50
	point94	94	3197	50	619	50	29	50	6	50
	point95	95	3197	50	619	50	29	50	6	50
	point96	96	3197	50	619	50	29	50	6	50
	point8	8	2782	50	538	50	25	50	5	50
	point92	92	2782	50	538	50	25	50	5	50
	point9	9								
Roadway6	point45	45	3695	50	715	50	33	50	6	50
	point46	46								
Roadway7	point97	97	2782	50	538	50	25	50	5	50
	point98	98	2782	50	538	50	25	50	5	50
	point99	99	3197	50	619	50	29	50	6	50
	point100	100	3197	50	619	50	29	50	6	50
	point101	101	3197	50	619	50	29	50	6	50
	point102	102	3197	50	619	50	29	50	6	50
	point103	103	3197	50	619	50	29	50	6	50
	point104	104	1263	50	244	50	11	50	2	50
	point105	105	1263	50	244	50	11	50	2	50
	point106	106	1263	50	244	50	11	50	2	50
	point107	107	1263	50	244	50	11	50	2	50
	point108	108	1263	50	244	50	11	50	2	50
	point109	109	1263	50	244	50	11	50	2	50
	point110	110	1263	50	244	50	11	50	2	50
	point111	111	1263	50	244	50	11	50	2	50
	point112	112	1263	50	244	50	11	50	2	50
	point113	113	1263	50	244	50	11	50	2	50
	point114	114	1263	50	244	50	11	50	2	50
	point115	115	1263	50	244	50	11	50	2	50
	point116	116	1263	50	244	50	11	50	2	50
	point117	117	424	55	82	55	4	55	1	55
	point118	118	424	55	82	55	4	55	1	55
	point119	119	424	55	82	55	4	55	1	55
	point120	120	424	55	82	55	4	55	1	55
	point121	121	424	55	82	55	4	55	1	55
	point122	122	424	55	82	55	4	55	1	55
	point123	123	424	55	82	55	4	55	1	55
	point124	124	424	55	82	55	4	55	1	55
	point125	125	424	55	82	55	4	55	1	55
	point126	126	424	55	82	55	4	55	1	55
	point127	127	424	55	82	55	4	55	1	55
	point128	128	424	55	82	55	4	55	1	55

	point129	129	424	55	82	55	4	55	1	55
	point130	130	424	55	82	55	4	55	1	55
	point131	131	424	55	82	55	4	55	1	55
	point132	132	424	55	82	55	4	55	1	55
	point133	133	424	55	82	55	4	55	1	55
	point134	134	424	55	82	55	4	55	1	55
	point135	135	424	55	82	55	4	55	1	55
	point136	136	424	55	82	55	4	55	1	55
	point137	137	424	55	82	55	4	55	1	55
	point138	138	352	50	68	50	3	50	1	50
	point139	139	352	50	68	50	3	50	1	50
	point140	140	352	50	68	50	3	50	1	50
	point141	141	352	50	68	50	3	50	1	50
	point142	142	352	50	68	50	3	50	1	50
	point143	143	352	50	68	50	3	50	1	50
	point144	144	352	50	68	50	3	50	1	50
	point145	145	580	50	112	50	5	50	1	50
	point146	146	580	50	112	50	5	50	1	50
	point147	147	580	50	112	50	5	50	1	50
	point148	148	580	50	112	50	5	50	1	50
	point149	149	580	50	112	50	5	50	1	50
	point150	150	580	50	112	50	5	50	1	50
	point151	151								
Roadway8	point152	152	3363	50	651	50	30	50	6	50
	point153	153								

BUILDINGS

Table A-7. Santa Monica TNM baseline building zone input

Building Row Name	Average Height (ft)	Building Percent (%)	Point #	X (ft)	Y (ft)	Z (ft)
Building1	20	20	1	-2482.3	-1239.5	0.0
			2	-65.2	-615.7	0.0
			3	3755.4	-771.7	0.0
Building2	20	20	4	-2326.3	-2253.1	0.0
			5	168.8	-1629.4	0.0
			6	4067.3	-1785.3	0.0
Building3	20	20	7	-1780.5	-3344.7	0.0
			8	558.6	-2954.9	0.0
			9	4067.3	-3032.8	0.0
Building5	20	20	14	-1159.1	-4327.9	0.0
			15	995.9	-3928.8	0.0

			16	3948.9	-4088.4	0.0
Building7	20	20	17	-321.0	-5664.7	0.0
			18	3749.4	-5545.0	0.0
Building9	20	20	23	756.4	-6502.7	0.0
			24	3390.2	-6502.7	0.0
Building10	20	20	25	28890.2	6786.0	0.0
			26	28890.2	5229.6	0.0
			27	26495.8	5229.6	0.0
Building11	20	20	28	30685.9	5588.8	0.0
			29	36432.4	5588.8	0.0
Building13	20	20	33	30668.9	6319.7	0.0
			34	36362.2	6343.0	0.0
Building14	20	20	35	31112.2	7113.0	0.0
			36	36478.9	7089.7	0.0

APPENDIX B MODELED OUTPUT

B.1 Air Emissions Output (MOBILE6.2)

B.1.1 Santa Monica Summer Weekday Report File

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: SANTA MONICAWDAY.IN (file 1, run 1).                     *
************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.

  M617 Comment:
               User supplied alternate AC input: Cloud Cover Fraction set to 0.60.
  M619 Comment:
               User supplied alternate AC input: Peak Sun between 12 AM, and  2 PM.
  M618 Comment:
               User supplied alternate AC input: Sunrise at  6 AM, Sunset at  8 PM.
  M601 Comment:
               User has enabled STAGE II REFUELING.

  M616 Comment:
               User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKDAY SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emission Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                    Calendar Year:  2004
                           Month:  July
                        Altitude:  Low
                Minimum Temperature:  60.0 (F)
                Maximum Temperature:  73.0 (F)
                  Absolute Humidity:   93. grains/lb
                Fuel Sulfur Content:  120. ppm

                Exhaust I/M Program:  Yes
                   Evap I/M Program:  Yes
                       ATP Program:  No
                   Reformulated Gas:  Yes

       Vehicle Type:      LDGV    LDGT12     LDGT34      LDGT       HDGV       LDDV       LDDT       HDDV         MC    All Veh
                GVWR:             <6000      >6000      (All)
                       ------    ------     ------     ------     ------     ------     ------     ------     ------     ------
   VMT Distribution:    0.4286    0.3293     0.1132                0.0361     0.0006     0.0018     0.0846     0.0058     1.0000
 Fuel Economy (mpg):      24.0      18.7       14.4       17.4        9.5       29.6       17.6        7.1       50.0       16.9
  ---------------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :     0.805     0.910      1.426      1.042      0.822      0.486      0.788      0.393      1.59      0.880
     Composite CO  :     12.26     15.68      18.56      16.42       9.57      1.324      1.375      2.096      7.12     13.087
     Composite NOX :     0.880     1.118      1.436      1.199      5.044      1.414      1.550     11.901      1.30      2.107
     Composite CO2 :     355.3     453.9      587.2      488.0      895.5      338.9      571.8     1422.6     146.0     522.93
  ---------------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKDAY SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 55.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

                    Calendar Year:  2004
                           Month:  July
```

```
                    Altitude:  Low
          Minimum Temperature:  60.0 (F)
          Maximum Temperature:  73.0 (F)
            Absolute Humidity:   93. grains/lb
          Fuel Sulfur Content:  120. ppm

          Exhaust I/M Program:  Yes
             Evap I/M Program:  Yes
                 ATP Program:  No
            Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4286    0.3293    0.1132                0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
Fuel Economy (mpg):      24.0      18.7      14.4      17.4       9.5      29.6      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC  :     0.788     0.888     1.392     1.017     0.790     0.476     0.772     0.376      1.59     0.859
    Composite CO   :     12.77     16.26     19.17     17.01     10.45     1.345     1.396     2.177      7.12     13.608
    Composite NOX  :     0.900     1.141     1.460     1.222     5.219     1.604     1.759     13.476     1.44     2.267
    Composite CO2  :     355.3     453.9     587.2     488.0     895.5     338.9     571.8     1422.6     146.0    522.93
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKDAY SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

               Calendar Year:  2004
                      Month:  July
                    Altitude:  Low
          Minimum Temperature:  60.0 (F)
          Maximum Temperature:  73.0 (F)
            Absolute Humidity:   93. grains/lb
          Fuel Sulfur Content:  120. ppm

          Exhaust I/M Program:  Yes
             Evap I/M Program:  Yes
                 ATP Program:  No
            Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4286    0.3293    0.1132                0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
Fuel Economy (mpg):      24.0      18.7      14.4      17.4       9.5      29.6      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC  :     0.805     0.910     1.426     1.042     0.822     0.486     0.788     0.393      1.59     0.880
    Composite CO   :     12.26     15.68     18.56     16.42     9.57      1.324     1.375     2.096      7.12     13.087
    Composite NOX  :     0.880     1.118     1.436     1.199     5.044     1.414     1.550     11.901     1.30     2.107
    Composite CO2  :     355.3     453.9     587.2     488.0     895.5     338.9     571.8     1422.6     146.0    522.93
 ---------------------------------------------------------------------------------------------------------------------
_
```

B.1.2 Santa Monica Summer Weekday PM10 and SO_2 Report File

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: SANTA MONICAWDAY.IN (file 1, run 1).                         *
************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKDAY SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                 Month:  July
                  Gasoline Fuel Sulfur Content:  120. ppm
                    Diesel Fuel Sulfur Content:  500. ppm
                         Particle Size Cutoff: 10.00 Microns
                             Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4286    0.3293    0.1132                0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0047    0.0061    0.0051    0.0675    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1691    0.0695    0.2230    ------    0.0191
           OCARBON:    ------    ------    ------    ------    ------    0.0477    0.1000    0.1116    ------    0.0096
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0043    0.0056    0.0094    0.0311    0.0004    0.0042
  Total Exhaust PM:    0.0054    0.0067    0.0082    0.0071    0.0717    0.2224    0.1789    0.3657    0.0208    0.0395
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0272    0.0288    0.0276    0.0930    0.2430    0.1994    0.4043    0.0374    0.0616
               SO2:    0.0273    0.0349    0.0456    0.0376    0.0684    0.1075    0.1806    0.4448    0.0132    0.0689
               NH3:    0.1013    0.1001    0.0966    0.0992    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKDAY SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
```

```
                          Calendar Year:  2004
                                 Month:  July
                Gasoline Fuel Sulfur Content:  120. ppm
                  Diesel Fuel Sulfur Content:  500. ppm
                        Particle Size Cutoff: 10.00 Microns
                           Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4286    0.3293    0.1132                0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
-------------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
            Lead:      0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
          GASPM:       0.0043    0.0047    0.0061    0.0051    0.0675    ------    ------    ------    0.0205    0.0067
         ECARBON:      ------    ------    ------    ------    ------    0.1691    0.0695    0.2230    ------    0.0191
         OCARBON:      ------    ------    ------    ------    ------    0.0477    0.1000    0.1116    ------    0.0096
             SO4:      0.0011    0.0019    0.0022    0.0020    0.0043    0.0056    0.0094    0.0311    0.0004    0.0042
  Total Exhaust PM:    0.0054    0.0067    0.0082    0.0071    0.0717    0.2224    0.1789    0.3657    0.0208    0.0395
           Brake:      0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
            Tire:      0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
        Total PM:      0.0260    0.0272    0.0288    0.0276    0.0930    0.2430    0.1994    0.4043    0.0374    0.0616
             SO2:      0.0273    0.0349    0.0456    0.0376    0.0684    0.1075    0.1806    0.4448    0.0132    0.0689
             NH3:      0.1013    0.1001    0.0966    0.0992    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
-------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKDAY SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                 Month:  July
                Gasoline Fuel Sulfur Content:  120. ppm
                  Diesel Fuel Sulfur Content:  500. ppm
                        Particle Size Cutoff: 10.00 Microns
                           Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4286    0.3293    0.1132                0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
-------------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
            Lead:      0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
          GASPM:       0.0043    0.0047    0.0061    0.0051    0.0675    ------    ------    ------    0.0205    0.0067
         ECARBON:      ------    ------    ------    ------    ------    0.1691    0.0695    0.2230    ------    0.0191
         OCARBON:      ------    ------    ------    ------    ------    0.0477    0.1000    0.1116    ------    0.0096
             SO4:      0.0011    0.0019    0.0022    0.0020    0.0043    0.0056    0.0094    0.0311    0.0004    0.0042
  Total Exhaust PM:    0.0054    0.0067    0.0082    0.0071    0.0717    0.2224    0.1789    0.3657    0.0208    0.0395
           Brake:      0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
            Tire:      0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
        Total PM:      0.0260    0.0272    0.0288    0.0276    0.0930    0.2430    0.1994    0.4043    0.0374    0.0616
             SO2:      0.0273    0.0349    0.0456    0.0376    0.0684    0.1075    0.1806    0.4448    0.0132    0.0689
             NH3:      0.1013    0.1001    0.0966    0.0992    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
-------------------------------------------------------------------------------------------------------------------------
```

B.1.3 Santa Monica Summer Weekend Report File

```
**************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                             *
* Input file: SANTA MONICAWEND.IN (file 1, run 1).                       *
**************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.

  M617 Comment:
               User supplied alternate AC input: Cloud Cover Fraction set to 0.60.
  M619 Comment:
               User supplied alternate AC input: Peak Sun between 12 AM, and  2 PM.
  M618 Comment:
               User supplied alternate AC input: Sunrise at  6 AM, Sunset at  8 PM.
  M601 Comment:
               User has enabled STAGE II REFUELING.

  M616 Comment:
               User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKEND SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
               there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                     Calendar Year:  2004
                            Month:  July
                         Altitude:  Low
               Minimum Temperature:  60.0 (F)
               Maximum Temperature:  73.0 (F)
                 Absolute Humidity:   93. grains/lb
               Fuel Sulfur Content:  120. ppm

               Exhaust I/M Program:  Yes
                  Evap I/M Program:  Yes
```

```
                    ATP Program:  No
                Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT       HDGV       LDDV       LDDT       HDDV         MC    All Veh
                GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------     ------     ------     ------     ------     ------     ------
   VMT Distribution:    0.4286    0.3293    0.1132                0.0361     0.0006     0.0018     0.0846     0.0058     1.0000
 Fuel Economy (mpg):      24.0      18.7      14.4      17.4        9.5       29.6       17.6        7.1       50.0       16.9
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.693     0.763     1.197     0.874      0.821     0.417      0.656      0.393      1.57      0.757
     Composite CO  :     10.94     13.56     15.92     14.16       9.57      1.097      1.098      2.096      6.92     11.521
     Composite NOX :      0.837     1.052     1.349     1.128      5.044     1.395      1.527     11.901      1.31      2.058
     Composite CO2 :    356.7     456.9     592.1     491.5      895.5     339.5      572.6     1422.6      146.3     525.11
  --------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKEND SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 55.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

                 Calendar Year:  2004
                         Month:  July
                      Altitude:  Low
             Minimum Temperature:  60.0 (F)
             Maximum Temperature:  73.0 (F)
               Absolute Humidity:   93. grains/lb
             Fuel Sulfur Content:  120. ppm

             Exhaust I/M Program:  Yes
                Evap I/M Program:  Yes
                    ATP Program:  No
                Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT       HDGV       LDDV       LDDT       HDDV         MC    All Veh
                GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------     ------     ------     ------     ------     ------     ------
   VMT Distribution:    0.4286    0.3293    0.1132                0.0361     0.0006     0.0018     0.0846     0.0058     1.0000
 Fuel Economy (mpg):      24.0      18.7      14.4      17.4        9.5       29.6       17.6        7.1       50.0       16.9
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.676     0.741     1.162     0.849      0.789     0.407      0.640      0.376      1.57      0.736
     Composite CO  :     11.45     14.14     16.54     14.76      10.45      1.119      1.119      2.177      6.92     12.041
     Composite NOX :      0.857     1.075     1.373     1.151      5.219     1.585      1.736     13.476      1.45      2.217
     Composite CO2 :    356.7     456.9     592.1     491.5      895.5     339.5      572.6     1422.6      146.3     525.11
  --------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKEND SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

                 Calendar Year:  2004
                         Month:  July
                      Altitude:  Low
             Minimum Temperature:  60.0 (F)
             Maximum Temperature:  73.0 (F)
               Absolute Humidity:   93. grains/lb
             Fuel Sulfur Content:  120. ppm

             Exhaust I/M Program:  Yes
                Evap I/M Program:  Yes
                    ATP Program:  No
                Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT       HDGV       LDDV       LDDT       HDDV         MC    All Veh
                GVWR:                <6000     >6000     (All)
                      ------    ------    ------    ------     ------     ------     ------     ------     ------     ------
   VMT Distribution:    0.4286    0.3293    0.1132                0.0361     0.0006     0.0018     0.0846     0.0058     1.0000
 Fuel Economy (mpg):      24.0      18.7      14.4      17.4        9.5       29.6       17.6        7.1       50.0       16.9
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
     Composite VOC :      0.693     0.763     1.197     0.874      0.821     0.417      0.656      0.393      1.57      0.757
```

```
    Composite CO  :     10.94     13.56     15.92     14.16      9.57     1.097     1.098     2.096      6.92    11.521
    Composite NOX :     0.837     1.052     1.349     1.128     5.044     1.395     1.527    11.901      1.31     2.058
    Composite CO2 :     356.7     456.9     592.1     491.5     895.5     339.5     572.6    1422.6     146.3    525.11
 ------------------------------------------------------------------------------------------------------------------------
```

B.1.4 Santa Monica Summer Weekend PM10 and SO_2 Report File

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: SANTA MONICAWEND.IN (file 1, run 1).                     *
************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKEND SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                            Calendar Year:  2004
                                    Month:  July
                Gasoline Fuel Sulfur Content:  120. ppm
                  Diesel Fuel Sulfur Content:  500. ppm
                        Particle Size Cutoff: 10.00 Microns
                           Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:             <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4286    0.3293    0.1132              0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
 ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0047    0.0061    0.0051    0.0675    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1691    0.0695    0.2230    ------    0.0191
           OCARBON:    ------    ------    ------    ------    ------    0.0477    0.1000    0.1116    ------    0.0096
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0043    0.0056    0.0094    0.0311    0.0004    0.0042
  Total Exhaust PM:    0.0054    0.0067    0.0082    0.0071    0.0717    0.2224    0.1789    0.3657    0.0208    0.0395
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0272    0.0288    0.0276    0.0930    0.2430    0.1994    0.4043    0.0374    0.0616
               SO2:    0.0273    0.0349    0.0456    0.0376    0.0684    0.1075    0.1806    0.4448    0.0132    0.0689
               NH3:    0.1013    0.1001    0.0966    0.0992    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKEND SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                            Calendar Year:  2004
                                    Month:  July
                Gasoline Fuel Sulfur Content:  120. ppm
                  Diesel Fuel Sulfur Content:  500. ppm
                        Particle Size Cutoff: 10.00 Microns
                           Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:             <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4286    0.3293    0.1132              0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
 ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0047    0.0061    0.0051    0.0675    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1691    0.0695    0.2230    ------    0.0191
           OCARBON:    ------    ------    ------    ------    ------    0.0477    0.1000    0.1116    ------    0.0096
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0043    0.0056    0.0094    0.0311    0.0004    0.0042
  Total Exhaust PM:    0.0054    0.0067    0.0082    0.0071    0.0717    0.2224    0.1789    0.3657    0.0208    0.0395
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0272    0.0288    0.0276    0.0930    0.2430    0.1994    0.4043    0.0374    0.0616
               SO2:    0.0273    0.0349    0.0456    0.0376    0.0684    0.1075    0.1806    0.4448    0.0132    0.0689
               NH3:    0.1013    0.1001    0.0966    0.0992    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WEEKEND SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                            Calendar Year:  2004
                                    Month:  July
                Gasoline Fuel Sulfur Content:  120. ppm
                  Diesel Fuel Sulfur Content:  500. ppm
                        Particle Size Cutoff: 10.00 Microns
                           Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:             <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4286    0.3293    0.1132              0.0361    0.0006    0.0018    0.0846    0.0058    1.0000
 ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0047    0.0061    0.0051    0.0675    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1691    0.0695    0.2230    ------    0.0191
           OCARBON:    ------    ------    ------    ------    ------    0.0477    0.1000    0.1116    ------    0.0096
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0043    0.0056    0.0094    0.0311    0.0004    0.0042
  Total Exhaust PM:    0.0054    0.0067    0.0082    0.0071    0.0717    0.2224    0.1789    0.3657    0.0208    0.0395
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0272    0.0288    0.0276    0.0930    0.2430    0.1994    0.4043    0.0374    0.0616
               SO2:    0.0273    0.0349    0.0456    0.0376    0.0684    0.1075    0.1806    0.4448    0.0132    0.0689
               NH3:    0.1013    0.1001    0.0966    0.0992    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ------------------------------------------------------------------------------------------------------------------------
```

B.1.5 Santa Monica Winter Weekday Report File

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: SANTA MONICAWDAY.IN (file 1, run 1).                     *
************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.

  M617 Comment:
```

```
              User supplied alternate AC input: Cloud Cover Fraction set to 0.56.
  M619 Comment:
              User supplied alternate AC input: Peak Sun between 11 AM, and  1 PM.
  M618 Comment:
              User supplied alternate AC input: Sunrise at  7 AM, Sunset at  5 PM.
  M601 Comment:
              User has enabled STAGE II REFUELING.

  M616 Comment:
              User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKDAY SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
           The user supplied arterial average speed of 50.0
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M112 Warning:
              Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
           there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                  Calendar Year:  2004
                          Month:  Jan.
                       Altitude:  Low
             Minimum Temperature:  51.0 (F)
             Maximum Temperature:  68.0 (F)
               Absolute Humidity:   70. grains/lb
             Fuel Sulfur Content:  120. ppm

             Exhaust I/M Program:  Yes
                Evap I/M Program:  Yes
                     ATP Program:  No
                Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110                0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
Fuel Economy (mpg):      24.0      18.7      14.4      17.4       9.5      29.5      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :     1.027     1.127     1.782     1.293     1.046     0.489     0.806     0.408      1.70     1.095
    Composite CO  :     16.58     21.01     24.86     21.99     10.90     1.315     1.405     2.149     7.48     17.436
    Composite NOX :     1.001     1.266     1.658     1.365     5.003     1.445     1.620    12.445      1.48     2.268
    Composite CO2 :     355.3     453.8     585.9     487.4     896.2     340.0     569.9    1424.4     145.6     521.21
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKDAY SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
           The user supplied arterial average speed of 55.0
           will be used for all hours of the day.  100% of VMT
           has been assigned to the arterial/collector roadway
           type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M112 Warning:
              Wintertime Reformulated Gasoline Rules Apply
  M 48 Warning:
           there are no sales for vehicle class HDGV8b

                  Calendar Year:  2004
                          Month:  Jan.
                       Altitude:  Low
             Minimum Temperature:  51.0 (F)
             Maximum Temperature:  68.0 (F)
               Absolute Humidity:   70. grains/lb
             Fuel Sulfur Content:  120. ppm

             Exhaust I/M Program:  Yes
                Evap I/M Program:  Yes
                     ATP Program:  No
                Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110                0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
Fuel Economy (mpg):      24.0      18.7      14.4      17.4       9.5      29.5      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
```

```
    Composite VOC :      1.001     1.095     1.732     1.257     0.997    0.478     0.790     0.390      1.70     1.065
    Composite CO  :      17.25     21.78     25.68     22.77     11.90    1.337     1.426     2.232      7.48    18.110
    Composite NOX :      1.023     1.291     1.684     1.391     5.177    1.639     1.838    14.087      1.64     2.434
    Composite CO2 :      355.3     453.8     585.9     487.4     896.2    340.0     569.9    1424.4     145.6    521.21
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKDAY SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

                   Calendar Year:  2004
                           Month:  Jan.
                        Altitude:  Low
              Minimum Temperature:  51.0 (F)
              Maximum Temperature:  68.0 (F)
                Absolute Humidity:   70. grains/lb
              Fuel Sulfur Content:  120. ppm

              Exhaust I/M Program:  Yes
                 Evap I/M Program:  Yes
                      ATP Program:  No
                Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
Fuel Economy (mpg):     24.0      18.7      14.4      17.4       9.5      29.5      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
    Composite VOC :      1.027     1.127     1.782     1.293     1.046    0.489     0.806     0.408      1.70     1.095
    Composite CO  :      16.58     21.01     24.86     21.99     10.90    1.315     1.405     2.149      7.48    17.436
    Composite NOX :      1.001     1.266     1.658     1.365     5.003    1.445     1.620    12.445      1.48     2.268
    Composite CO2 :      355.3     453.8     585.9     487.4     896.2    340.0     569.9    1424.4     145.6    521.21
 ---------------------------------------------------------------------------------------------------------------------
```

B.1.6 Santa Monica Winter Weekday PM10 and SO_2 Report File

```
*************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                            *
* Input file: SANTA MONICAWDAY.IN (file 1, run 1).                      *
*************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKDAY SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                  Month:  Jan.
              Gasoline Fuel Sulfur Content:  120. ppm
                Diesel Fuel Sulfur Content:  500. ppm
                      Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
            Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
           GASPM:    0.0043    0.0048    0.0062    0.0052    0.0686    ------    ------    ------    0.0205    0.0067
         ECARBON:    ------    ------    ------    ------    ------    0.1739    0.0736    0.2322    ------    0.0197
         OCARBON:    ------    ------    ------    ------    ------    0.0490    0.1059    0.1161    ------    0.0100
             SO4:    0.0011    0.0019    0.0022    0.0020    0.0042    0.0056    0.0094    0.0312    0.0004    0.0042
  Total Exhaust PM:  0.0055    0.0068    0.0084    0.0072    0.0729    0.2286    0.1889    0.3794    0.0208    0.0406
           Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
            Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
        Total PM:    0.0260    0.0273    0.0290    0.0277    0.0941    0.2491    0.2095    0.4180    0.0374    0.0626
             SO2:    0.0273    0.0349    0.0455    0.0376    0.0686    0.1078    0.1801    0.4454    0.0132    0.0686
             NH3:    0.1013    0.1000    0.0962    0.0990    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ---------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKDAY SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                  Month:  Jan.
              Gasoline Fuel Sulfur Content:  120. ppm
                Diesel Fuel Sulfur Content:  500. ppm
                      Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                     ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 ---------------------------------------------------------------------------------------------------------------------
Composite Emission Factors (g/mi):
            Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
           GASPM:    0.0043    0.0048    0.0062    0.0052    0.0686    ------    ------    ------    0.0205    0.0067
         ECARBON:    ------    ------    ------    ------    ------    0.1739    0.0736    0.2322    ------    0.0197
         OCARBON:    ------    ------    ------    ------    ------    0.0490    0.1059    0.1161    ------    0.0100
```

```
                SO4:    0.0011    0.0019    0.0022    0.0020    0.0042    0.0056    0.0094    0.0312    0.0004    0.0042
  Total Exhaust PM:     0.0055    0.0068    0.0084    0.0072    0.0729    0.2286    0.1889    0.3794    0.0208    0.0406
             Brake:     0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:     0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:     0.0260    0.0273    0.0290    0.0277    0.0941    0.2491    0.2095    0.4180    0.0374    0.0626
               SO2:     0.0273    0.0349    0.0455    0.0376    0.0686    0.1078    0.1801    0.4454    0.0132    0.0686
               NH3:     0.1013    0.1000    0.0962    0.0990    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ------------------------------------------------------------------------------------------------------------------------


* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKDAY SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #

                            Calendar Year:  2004
                                   Month:  Jan.
                Gasoline Fuel Sulfur Content:  120. ppm
                  Diesel Fuel Sulfur Content:  500. ppm
                        Particle Size Cutoff: 10.00 Microns
                           Reformulated Gas:  Yes

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
              Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0048    0.0062    0.0052    0.0686    ------    ------    ------    0.0205    0.0067
          ECARBON:     ------    ------    ------    ------    ------    0.1739    0.0736    0.2322    ------    0.0197
          OCARBON:     ------    ------    ------    ------    ------    0.0490    0.1059    0.1161    ------    0.0100
                SO4:    0.0011    0.0019    0.0022    0.0020    0.0042    0.0056    0.0094    0.0312    0.0004    0.0042
  Total Exhaust PM:     0.0055    0.0068    0.0084    0.0072    0.0729    0.2286    0.1889    0.3794    0.0208    0.0406
             Brake:     0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:     0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:     0.0260    0.0273    0.0290    0.0277    0.0941    0.2491    0.2095    0.4180    0.0374    0.0626
               SO2:     0.0273    0.0349    0.0455    0.0376    0.0686    0.1078    0.1801    0.4454    0.0132    0.0686
               NH3:     0.1013    0.1000    0.0962    0.0990    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 ------------------------------------------------------------------------------------------------------------------------
```

B.1.7 Santa Monica Winter Weekend Report File

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: SANTA MONICAWEND.IN (file 1, run 1).                              *
************************************************************************
  M603 Comment:
               User has disabled the calculation of REFUELING emissions.

  M617 Comment:
               User supplied alternate AC input: Cloud Cover Fraction set to 0.56.
  M619 Comment:
               User supplied alternate AC input: Peak Sun between 11 AM, and  1 PM.
  M618 Comment:
               User supplied alternate AC input: Sunrise at  7 AM, Sunset at  5 PM.
  M601 Comment:
               User has enabled STAGE II REFUELING.

  M616 Comment:
               User has supplied post-1999 sulfur levels.

* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKEND SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
*** I/M credits for Tech1&2 vehicles were read from the following external
    data file: TECH12.D
  M 48 Warning:
              there are no sales for vehicle class HDGV8b

* Reading Ammonia (NH3) Basic Emissiion Rates
* from the external data file PMNH3BER.D

* Reading Ammonia (NH3) Sulfur Deterioration Rates
* from the external data file PMNH3SDR.D

                    Calendar Year:  2004
                           Month:  Jan.
                        Altitude:  Low
                Minimum Temperature:  51.0 (F)
                Maximum Temperature:  68.0 (F)
                  Absolute Humidity:   70. grains/lb
                Fuel Sulfur Content:  120. ppm

                Exhaust I/M Program:  Yes
                   Evap I/M Program:  Yes
                        ATP Program:  No
                  Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

      Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
             GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
  VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
Fuel Economy (mpg):     24.0      18.7      14.4      17.4       9.5      29.5      17.6       7.1      50.0      16.9
 ------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.880     0.941     1.488     1.080     1.047    0.420     0.673     0.408     1.68      0.938
```

```
    Composite CO  :     14.72     18.13     21.39     18.96     10.90     1.092     1.124     2.149      7.23     15.303
    Composite NOX :     0.953     1.192     1.558     1.285     5.003     1.426     1.596    12.445      1.49     2.212
    Composite CO2 :     356.7     456.9     590.9     491.0     896.2     340.5     570.8    1424.4     145.9     523.39
 ---------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKEND SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 55.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

                 Calendar Year:  2004
                         Month:  Jan.
                      Altitude:  Low
            Minimum Temperature:  51.0 (F)
            Maximum Temperature:  68.0 (F)
              Absolute Humidity:   70. grains/lb
            Fuel Sulfur Content:  120. ppm

            Exhaust I/M Program:  Yes
               Evap I/M Program:  Yes
                    ATP Program:  No
              Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 Fuel Economy (mpg):      24.0      18.7      14.4      17.4       9.5      29.5      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.854     0.910     1.438     1.044     0.998     0.410     0.657     0.390      1.68     0.907
    Composite CO  :     15.39     18.90     22.22     19.74     11.90     1.113     1.145     2.232      7.23     15.976
    Composite NOX :     0.975     1.217     1.585     1.311     5.177     1.621     1.814    14.087      1.65     2.378
    Composite CO2 :     356.7     456.9     590.9     491.0     896.2     340.5     570.8    1424.4     145.9     523.39
 ---------------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKEND SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # # # #
  M583 Warning:
            The user supplied arterial average speed of 50.0
            will be used for all hours of the day.  100% of VMT
            has been assigned to the arterial/collector roadway
            type for all hours of the day and all vehicle types.

* Reading PM Gas Carbon ZML Levels
* from the external data file PMGZML.CSV

* Reading PM Gas Carbon DR1 Levels
* from the external data file PMGDR1.CSV

* Reading PM Gas Carbon DR2 Levels
* from the external data file PMGDR2.CSV

* Reading PM Diesel Zero Mile Levels
* from the external data file PMDZML.CSV

* Reading the First PM Deterioration Rates
* from the external data file PMDDR1.CSV

* Reading the Second PM Deterioration Rates
* from the external data file PMDDR2.CSV
  M112 Warning:
               Wintertime Reformulated Gasoline Rules Apply
  M 48 Warning:
            there are no sales for vehicle class HDGV8b

                 Calendar Year:  2004
                         Month:  Jan.
                      Altitude:  Low
            Minimum Temperature:  51.0 (F)
            Maximum Temperature:  68.0 (F)
              Absolute Humidity:   70. grains/lb
            Fuel Sulfur Content:  120. ppm

            Exhaust I/M Program:  Yes
               Evap I/M Program:  Yes
                    ATP Program:  No
              Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
            GVWR:                 <6000     >6000     (All)
                       ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 Fuel Economy (mpg):      24.0      18.7      14.4      17.4       9.5      29.5      17.6       7.1      50.0      16.9
 ---------------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
    Composite VOC :      0.880     0.941     1.488     1.080     1.047     0.420     0.673     0.408      1.68     0.938
    Composite CO  :     14.72     18.13     21.39     18.96     10.90     1.092     1.124     2.149      7.23     15.303
    Composite NOX :     0.953     1.192     1.558     1.285     5.003     1.426     1.596    12.445      1.49     2.212
    Composite CO2 :     356.7     456.9     590.9     491.0     896.2     340.5     570.8    1424.4     145.9     523.39
 ---------------------------------------------------------------------------------------------------------------------------
```

B.1.8 Santa Monica Winter Weekend PM10 and SO_2 Report File

```
************************************************************************
* MOBILE6.2.01 (31-Oct-2002)                                           *
* Input file: SANTA MONICAWEND.IN (file 1, run 1).                          *
************************************************************************

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKEND SEGMENT 1-4
* File 1, Run 1, Scenario 1.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                 Month:  Jan.
               Gasoline Fuel Sulfur Content:  120. ppm
                 Diesel Fuel Sulfur Content:  500. ppm
                       Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:             <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
               Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0048    0.0062    0.0052    0.0686    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1739    0.0736    0.2322    ------    0.0197
           OCARBON:    ------    ------    ------    ------    ------    0.0490    0.1059    0.1161    ------    0.0100
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0042    0.0056    0.0094    0.0312    0.0004    0.0042
  Total Exhaust PM:    0.0055    0.0068    0.0084    0.0072    0.0729    0.2286    0.1889    0.3794    0.0208    0.0406
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0273    0.0290    0.0277    0.0941    0.2491    0.2095    0.4180    0.0374    0.0626
               SO2:    0.0273    0.0349    0.0455    0.0376    0.0686    0.1078    0.1801    0.4454    0.0132    0.0686
               NH3:    0.1013    0.1000    0.0962    0.0990    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKEND SEGMENT 5
* File 1, Run 1, Scenario 2.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                 Month:  Jan.
               Gasoline Fuel Sulfur Content:  120. ppm
                 Diesel Fuel Sulfur Content:  500. ppm
                       Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:             <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
               Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0048    0.0062    0.0052    0.0686    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1739    0.0736    0.2322    ------    0.0197
           OCARBON:    ------    ------    ------    ------    ------    0.0490    0.1059    0.1161    ------    0.0100
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0042    0.0056    0.0094    0.0312    0.0004    0.0042
  Total Exhaust PM:    0.0055    0.0068    0.0084    0.0072    0.0729    0.2286    0.1889    0.3794    0.0208    0.0406
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0273    0.0290    0.0277    0.0941    0.2491    0.2095    0.4180    0.0374    0.0626
               SO2:    0.0273    0.0349    0.0455    0.0376    0.0686    0.1078    0.1801    0.4454    0.0132    0.0686
               NH3:    0.1013    0.1000    0.0962    0.0990    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
 -------------------------------------------------------------------------------------------------------------------

* # # # # # # # # # # # # # # # # # # # # # # # # #
* SANTA MONICA WINTER WEEKEND SEGMENT 7-9
* File 1, Run 1, Scenario 3.
* # # # # # # # # # # # # # # # # # # # # # # # # #

                          Calendar Year:  2004
                                 Month:  Jan.
               Gasoline Fuel Sulfur Content:  120. ppm
                 Diesel Fuel Sulfur Content:  500. ppm
                       Particle Size Cutoff: 10.00 Microns
                          Reformulated Gas:  Yes

Emissions determined from WEEKEND hourly vehicle activity fractions.

       Vehicle Type:      LDGV    LDGT12    LDGT34      LDGT      HDGV      LDDV      LDDT      HDDV        MC   All Veh
                GVWR:             <6000     >6000     (All)
                      ------    ------    ------    ------    ------    ------    ------    ------    ------    ------
   VMT Distribution:    0.4358    0.3253    0.1110              0.0358    0.0006    0.0018    0.0839    0.0058    1.0000
 -------------------------------------------------------------------------------------------------------------------
 Composite Emission Factors (g/mi):
               Lead:    0.0000    0.0000    0.0000    0.0000    0.0000    ------    ------    ------    0.0000    0.0000
             GASPM:    0.0043    0.0048    0.0062    0.0052    0.0686    ------    ------    ------    0.0205    0.0067
           ECARBON:    ------    ------    ------    ------    ------    0.1739    0.0736    0.2322    ------    0.0197
           OCARBON:    ------    ------    ------    ------    ------    0.0490    0.1059    0.1161    ------    0.0100
               SO4:    0.0011    0.0019    0.0022    0.0020    0.0042    0.0056    0.0094    0.0312    0.0004    0.0042
  Total Exhaust PM:    0.0055    0.0068    0.0084    0.0072    0.0729    0.2286    0.1889    0.3794    0.0208    0.0406
             Brake:    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125    0.0125
              Tire:    0.0080    0.0080    0.0080    0.0080    0.0087    0.0080    0.0080    0.0260    0.0040    0.0095
          Total PM:    0.0260    0.0273    0.0290    0.0277    0.0941    0.2491    0.2095    0.4180    0.0374    0.0626
               SO2:    0.0273    0.0349    0.0455    0.0376    0.0686    0.1078    0.1801    0.4454    0.0132    0.0686
               NH3:    0.1013    0.1000    0.0962    0.0990    0.0451    0.0068    0.0068    0.0270    0.0113    0.0913
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B.2 Noise Emissions Output (TNM)

(see Sections 5.2.1 and 5.2.2)

REPORT DOCUMENTATION PAGE	Form Approved OMB No. 0704-0188

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Visitor Vehicle Air and Noise Emissions Study: Santa Monica Mountains National Recreation Area

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5d. PROJECT NUMBER(S)

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U.S. Department of Transportation
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12. DISTRIBUTION/AVAILABILITY STATEMENT

Public distribution/availability.

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14. ABSTRACT (Maximum 200 words)

The U.S. Department of Transportation, John A. Volpe National Transportation Systems Center (Volpe Center), Environmental Measurement and Modeling Division (Volpe Center), provided technical support to a National Park Service (NPS) project to evaluate vehicular emissions in Santa Monica Mountains National Recreation Area. Air emissions were analyzed using the Environmental Protection Agency's (EPA) MOBILE6.2 emissions inventory prediction model, and noise emissions were analyzed using the Federal Highway Administration's (FHWA) Traffic Noise Model. Input data are based on historical data, US Geological Survey data, and recommended roadway speeds. An emissions inventory, location point receiver analysis, and contour analysis are presented for Santa Monica Mountains National Recreation Area.

15. SUBJECT TERMS

national parks, emissions, emissions inventory, MOBILE6, TNM, traffic impact, National Park Service, Santa Monica Mountains National Recreation Area, LAeq1h

16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT	18. NUMBER OF PAGES	19a. NAME OF RESPONSIBLE PERSON
			NA	60	Clay Reherman
a. REPORT	b. ABSTRACT	c. THIS PAGE			19b. TELEPHONE NUMBER
NONE	NONE	NONE			(617) 494-6341

METRIC/ENGLISH CONVERSION FACTORS

ENGLISH TO METRIC

LENGTH (APPROXIMATE)

1 inch (in) = 2.5 centimeters (cm)
1 foot (ft) = 30 centimeters (cm)
1 yard (yd) = 0.9 meter (m)
1 mile (mi) = 1.6 kilometers (km)

AREA (APPROXIMATE)

1 square inch (sq in, in^2) = 6.5 square centimeters (cm^2)
1 square foot (sq ft, ft^2) = 0.09 square meter (m^2)
1 square yard (sq yd, yd^2) = 0.8 square meter (m^2)
1 square mile (sq mi, mi^2) = 2.6 square kilometers (km^2)
1 acre = 0.4 hectare (he) = 4,000 square meters (m^2)

MASS – WEIGHT (APPROXIMATE)

1 ounce (oz) = 28 grams (gm)
1 pound (lb) = 0.45 kilogram (kg)
1 short ton = 2,000 pounds (lb) = 0.9 tonne (t)

VOLUME (APPROXIMATE)

1 teaspoon (tsp) = 5 milliliters (ml)
1 tablespoon (tbsp) = 15 milliliters (ml)
1 fluid ounce (fl oz) = 30 milliliters (ml)
1 cup © = 0.24 liter (l)
1 pint (pt) = 0.47 liter (l)
1 quart (qt) = 0.96 liter (l)
1 gallon (gal) = 3.8 liters (l)
1 cubic foot (cu ft, ft^3) = 0.03 cubic meter (m^3)
1 cubic yard (cu yd, yd^3) = 0.76 cubic meter (m^3)

TEMPERATURE (EXACT)

[(x-32)(5/9)] °F = y °C

METRIC TO ENGLISH

LENGTH (APPROXIMATE)

1 millimeter (mm) = 0.04 inch (in)
1 centimeter (cm) = 0.4 inch (in)
1 meter (m) = 3.3 feet (ft)
1 meter (m) = 1.1 yards (yd)
1 kilometer (km) = 0.6 mile (mi)

AREA (APPROXIMATE)

1 square centimeter (cm^2) = 0.16 square inch (sq in, in^2)
1 square meter (m^2) = 1.2 square yards (sq yd, yd^2)
1 square kilometer (km^2) = 0.4 square mile (sq mi, mi^2)
10,000 square meters (m^2) = 1 hectare (ha) = 2.5 acres

MASS – WEIGHT (APPROXIMATE)

1 gram (gm) = 0.036 ounce (oz)
1 kilogram (kg) = 2.2 pounds (lb)
1 tonne (t) = 1,000 kilograms (kg) = 1.1 short tons

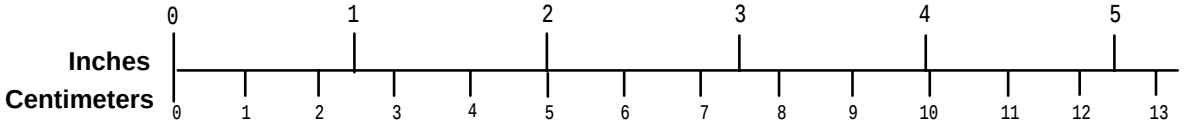
VOLUME (APPROXIMATE)

1 milliliter (ml) = 0.03 fluid ounce (fl oz)
1 liter (l) = 2.1 pints (pt)
1 liter (l) = 1.06 quarts (qt)
1 liter (l) = 0.26 gallon (gal)
1 cubic meter (m^3) = 36 cubic feet (cu ft, ft^3)
1 cubic meter (m^3) = 1.3 cubic yards (cu yd, yd^3)

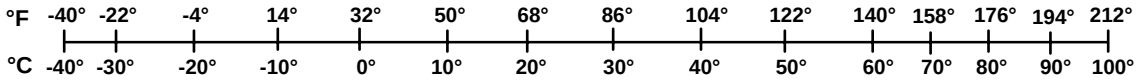
TEMPERATURE (EXACT)

[(9/5) y + 32] °C = x °F

QUICK INCH - CENTIMETER LENGTH CONVERSION



QUICK FAHRENHEIT - CELSIUS TEMPERATURE CONVERSION



For more exact and or other conversion factors, see NIST Miscellaneous Publication 286, Units of Weights and Measures. Price $2.50 SD Catalog No. C13 10286

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As the nation's principal conservation agency, the Department of the Interior has the responsibility for most of our nationally owned public lands and natural resources. This includes fostering sound use of our land and water resources; protecting our fish, wildlife, and biological diversity; preserving the environmental and cultural values of our parks and historic places; and providing for the enjoyment of life through outdoor recreation. The department assesses our energy and mineral resources and works to ensure that their development is in the best interests of all our people by encouraging stewardship and citizen participation in their care. The department also has a major responsibility for American Indian reservation communities and for people who live in island territories under U.S. administration.

NPS D-86 / September 2005