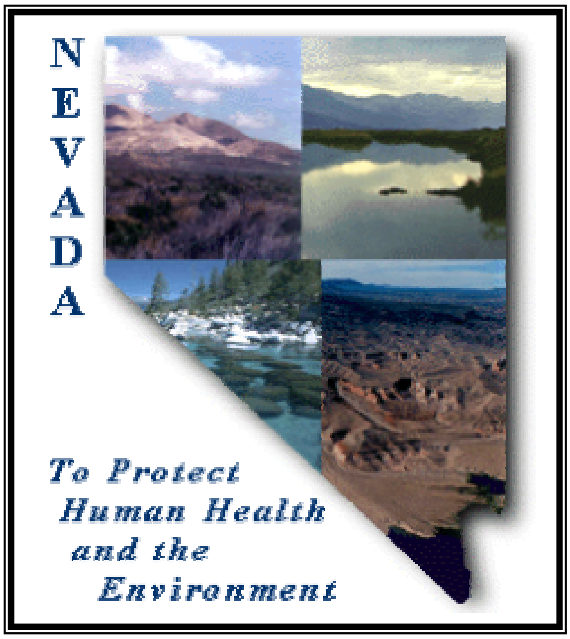

Air Quality Modeling Report

Assessment of PSD Increment in the Clovers Area

Prepared for

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Division of Environmental Protection

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The objective of this modeling analysis was to evaluate and document the current status of Prevention of Significant Deterioration (PSD) increment in Nevada's hydrographic area 64 (HA64), and incorporate HA64 emission and increment information into a PSD increment tracking system. To achieve these objectives, Tetra Tech EM, Inc. (Tetra Tech) developed a PSD source inventory and PSD increment modeling was completed.

PSD INCREMENT

PSD increments are the maximum permissible level of increased air quality impacts that may occur beyond a baseline air quality level. PSD increments are an important part of the PSD regulations, which are intended to help encourage economic growth while preserving existing clean air resources. Allowable PSD increments have been established for sulfur dioxide (SO_2) and particulate matter smaller than 10 microns (PM_{10}). It is important to note that regulations do not allow total air quality impacts beyond the applicable National Ambient Air Quality Standards (NAAQS) limits, even if all the PSD increment is not consumed (EPA 1990).

PSD increments are tracked on both a pollutant-by-pollutant and planning area by planning area basis. PSD increments are only affected by changes to the inventory of baseline sources and emissions that meet specific regulatory criteria. PSD increment impacts represent net air quality impacts in a triggered planning area, compared to baseline conditions, resulting from applicable changes to pollutant sources. The effect of applicable changes on PSD increments is tracked by calculating net air quality impacts through the use of air quality dispersion models. Net changes can effectively result in either a lower air quality impact, referred to as increment expansion, or a higher air quality impact, referred to as increment consumption.

PSD increment net changes are tracked relative to baseline impact conditions on two key baseline dates, one for minor sources of the pollutant of concern and one for major sources of the pollutant of concern. Minor source baseline dates are established according to permitting activities in each planning area, while major source baseline dates have been established within the Code of Federal Regulations (CFR) for each pollutant on a nationwide basis.

After the minor source baseline date for SO_2, NO_2, or PM_{10} is triggered in a planning area, PSD increment is impacted due to emissions changes at:

1. Minor stationary sources and any area or mobile sources within the triggered planning area following the minor source baseline date for a particular pollutant for that planning area.
2. Major sources within or outside the planning area following the major source baseline date for a particular pollutant.

The increases and decreases in impacts of triggered pollutants can be associated with construction at major stationary sources after the major source baseline date, or with any changes after the minor source baseline date at major or minor stationary sources and any area or mobile sources of the triggered pollutant.

EMISSION INVENTORIES

Emission rates used in each of the modeled scenarios were based on the emission inventories that were compiled for the current date and each baseline date and applicable pollutant. Baseline and current information for stationary point sources came from the Nevada Department of Environmental Protection (NDEP) permitting files. The information gathered from the permitting files provided a comprehensive background for stationary sources within HA64 for the emission inventories. Tetra Tech was also able to use the Aerometric Information Retrieval System Database (AIRData) National Air Pollutant Emission Trends (NET) to identify railroad, vehicle, and miscellaneous fugitive emissions on a countywide basis for the current date and minor source baseline dates.

PSD INCREMENT MODELING RESULTS

The modeling showed that there are no SO_2 PSD increment exceedences in HA64. Additionally, there are no 24-hour or annual PM_{10} PSD increment exceedences outside facility boundaries in HA64. There are 24-hour PM_{10} PSD increment exceedences within Sierra Pacific Power's Valmy Generating Station boundary.

INCREMENT TRACKING SYSTEM

An Increment Tracking System (ITS), database and GIS desktop application was developed to permit access to major and minor source baseline information, annual emissions data, and permitted emissions data. The ITS provides users with a user-friendly graphical user interface (GUI) for entering data, querying data, generating model input files, and reporting capabilities. The ITS will be used to provide local planners, developers, and industry with the tools necessary to help maintain air quality standards within allowable limits.

1.0 INTRODUCTION

This effort was undertaken by Tetra Tech EM Inc. (Tetra Tech) to provide technical analysis and project coordination services to the Nevada Division of Environmental Protection (NDEP) Bureau of Air Pollution Control (BAPC) to accurately evaluate and document the current status of Prevention of Significant Deterioration (PSD) increments in hydrographic area 64 (HA64). The information and tools that result from the project can be used to provide local planners, developers, and industry with the tools necessary to help maintain air quality standards within allowable limits.

This report is organized to give the reader some background about the project's goals and phases, as well as background on the regulations driving this project. The report then describes key components in the project, such as the emission inventory and air quality modeling of the PSD increment in HA64. The final section of this report summarizes the results of the PSD increment study and Tetra Tech's recommendations for future actions. All modeling files used in this study are presented in Appendix A.

2.0 BACKGROUND

The evaluation focused on the air quality planning area HA64 because the minor source baseline dates have been triggered in this HA by PSD permit applications for major sources. In HA64, the sulfur dioxide (SO_2) and the particulate matter smaller that 10 microns (PM_{10}) minor source baseline dates were triggered on January 1, 1978 as a result of an application submitted by Sierra Pacific Power Company for the Valmy Generating Station. Because the minor source baseline dates were triggered in the planning area, PSD increment must be tracked to ensure that air quality does not deteriorate beyond the specified regulatory increment for each of the triggered pollutants.

The PSD increment evaluation is based on the changes in modeled concentrations of airborne contaminants from pollutant emissions as of the major or minor baseline dates compared with modeled concentrations from current pollutant emissions. PSD increment impacts occur with changes to stationary, area, or mobile sources that existed as of the major and minor baseline dates. Changes that affect PSD increment impacts include increasing or decreasing emissions, increasing or decreasing effective stack height, changing the orientation of the stack (vertical or horizontal), and moving the location of a source.

Emission inventories were developed for each applicable pollutant and baseline date using data sources such as NDEP records, the U. S. Environmental Protection Agency's (EPA) Aerometric Information Retrieval System Database (AIRData), National Air Pollutant Emission Trends (NET) database, and Nevada Department of Transportation (NDOT) records. Baseline emissions source data represent stationary source operations as of a given baseline date, and were based on available records from the closest date prior to the baseline date. In other words, Tetra Tech used emission data as near to the baseline date as possible where records exist, but before the baseline trigger date. Fugitive emissions caused by railroads, vehicles, and miscellaneous sources also consume PSD increment; therefore, the minor source baseline date inventories and the current emission inventory included fugitive emissions. EPA maintains records of these fugitive emissions for each county in every state in the AIRData NET database.

After the emission inventories were established, modeling was completed for each PSD triggered pollutant in HA64. The results from the baseline and current modeling were compared for each triggered pollutant in HA64. This analysis used the American Meteorological Society/EPA Regulatory Model Improvement Committee Dispersion Model (AERMOD). This model was selected for the study because EPA is in the process of adopting this model for regulatory use, and Tetra Tech and NDEP want to ensure

that the PSD increment tracking system developed using this model is not outdated when the upgrade occurs. The algorithms AERMOD uses to model terrain effects are more complex than in the Industrial Source Complex Short-Term Model Version 3 (ISCST3), which is the current EPA dispersion model of choice.

An Increment Tracking System (ITS), database and a geographic information system (GIS) desktop application were developed in the previous PSD increment study of the Truckee River Corridor. Data from HA64 were integrated into an ITS to allow access to major and minor source baseline information, annual emissions data, and permitted emissions data for this study. The ITS combines the relational database capabilities of Microsoft Access with the spatial analysis capability of ArcView (a geographic information system) to provide BAPC a desktop application for storing, maintaining, retrieving, and presenting emissions data. Additionally, the ITS generates AERMOD model input data, using user defined parameters, and imports, stores, and presents post–processed AERMOD output files to provide BAPC a method of archiving and reviewing results from model runs. The ITS provides users with a user-friendly graphical user interface (GUI) for entering data, querying data, generating model input files, and reporting capabilities. The ITS is described in more detail in the previous Truckee River Corridor report.

2.1 GOALS

The objective of the analysis was to evaluate and document the current status of PSD increments in HA64 while establishing PSD increment tracking capabilities. To achieve these objectives, PSD increment source inventories and PSD increment modeling were completed. The following interim goals were established and attained throughout the project:

- Identify and collect data on major point sources within a 50-kilometer (km) radius of HA64 for facilities in operation as of the major source baseline dates for each pollutant
- Identify and collect data on point sources and area fugitive emissions for operations in the planning areas as of the minor source baseline dates for each pollutant
- Identify and collect data for current major and minor point sources and area fugitive emissions for PM_{10} and SO_2
- Develop emission inventories that pertain to HA64 for baseline dates and the affiliated pollutants
- Integrate HA64 data into a PSD increment tracking system database
- Model each emission inventory scenario and subtract results for the baseline modeling from results for the current modeling to calculate existing PSD increment consumption and expansion
- Display PSD modeling results using GIS technology

The following section describes the project phases and how these goals were achieved.

2.2 PROJECT PHASES

Increment consumption in HA64 was evaluated and integrated into an increment tracking system in seven project phases. Each phase included components for emissions inventorying, information technology (IT), and GIS. The seven phases described in the following sections explain how current PSD increment consumption was modeled and how HA64 data were integrated into a PSD increment tracking system. Figure 2-1 is a flow diagram that shows the progression of the seven phases.

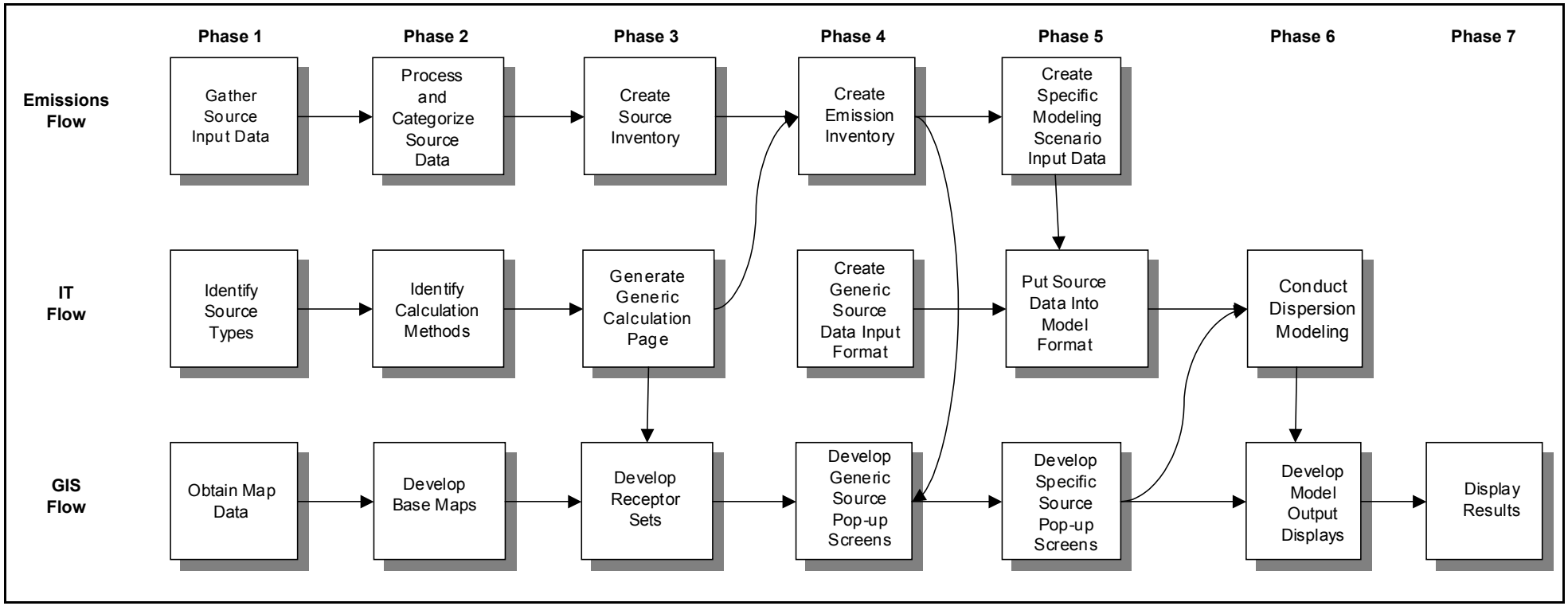
2.2.1 Phase I

In this phase, the project team met to explore the scope of the project and to fully explain the remaining six phases of the project. The project team was made up of air quality scientists, IT specialists, and GIS specialists. During Phase I, air quality scientists investigated sources of emissions data. They sought out available information on the Internet and selected the information that should be included in the investigation. Tetra Tech identified the source types that would be entered into the database, and established the parameters that would be needed in the database for both point and fugitive sources. Map data were obtained from NDEP, the U.S. Geological Survey (USGS), and the U.S. Bureau of the Census for the study area during this phase.

2.2.2 Phase II

During Phase II, Tetra Tech decided how the collected data would be used in an interactive format to produce emission inventories, an increment tracking system, and a graphical representation of increment consumption in the planning area. The information on point sources was processed and categorized so it would be ready for input into an emission inventory for each of the baseline dates. The project team identified database themes that would be used for the increment tracking system. These themes consisted of emission calculation fields as well as point source parameter fields. The team then developed base maps for HA64. The maps displayed HA64 with area grid cells as an overlay. The maps also showed the interstate highways and railroads that pass through HA64.

FIGURE 2-1
PREVENTION OF SIGNIFICANT DETERIORATION INCREMENT
STUDY PROJECT FLOW DIAGRAM



2.2.3 Phase III

The third phase of the project focused mainly on compiling the point source inventory. Tetra Tech finished categorizing the point sources, and then organized the data from the source inventory into a usable format for the ITS database. Data on fugitive emissions were also collected and apportioned into the HA64 grid cells for the minor source baseline dates. Receptor sets were created for use in modeling the PSD increment for HA64.

2.2.4 Phase IV

The project team completed emission inventories for each baseline date and each pollutant during Phase IV. A generic source data input format was developed from the nearly complete emission inventories for each baseline date. This format enabled the database to produce information on point sources in an AERMOD input file format.

2.2.5 Phase V

Phase V was the modeling phase, and specific modeling scenarios were created during this phase. Tetra Tech processed the meteorological data with the American Meteorological Society/Environmental Protection Agency Regulatory Model Improvement Committee Dispersion Model (AERMOD) meteorological preprocessor (AERMET), and assigned elevations to the receptor sets using the AERMOD terrain processor (AERMAP). The point and area source data were put into model format. The results were model input files for each modeling scenario. The pop-up screens for the increment tracking system were finalized.

2.2.6 Phase VI

The sixth phase involved the dispersion modeling for each scenario and development of displays of model output for the increment tracking system. The project team completed a quality assurance/quality control (QA/QC) check of the model runs and refined the model. The modeling results indicated the state of PSD increment consumption in HA64. GIS output displays show the modeling results in a map format.

2.2.7 Phase VII

GIS output displays and the final report were completed cooperatively during Phase VII.

2.3 PSD INCREMENT

PSD increments are the maximum permissible level of increased air quality impacts, due to sources and emissions meeting regulatory criteria, which may occur beyond a regulatory baseline air quality level. PSD regulations in Title 40 of the Code of Federal Regulations, Part 52 Subpart 21 (40 CFR 52.21) establish PSD increments. Allowable PSD increments have been established for SO_2, NO_2, and PM_{10} under various averaging periods. Allowable PSD increments do not exist for other pollutants. PSD regulations are intended to allow for economic growth while preserving existing clean air resources, and PSD increments are an important part of the program to achieve this objective. PSD increments are designed to protect against excessive deterioration of air quality. It should be noted that regulations do not allow total air quality impacts beyond the applicable National Ambient Air Quality Standards (NAAQS) limits, even if all the PSD increment is not consumed (EPA 1990).

PSD increments are tracked on a pollutant-by-pollutant and planning area by planning area basis. PSD increment impacts represent net air quality impacts in a triggered planning area, compared to baseline conditions. PSD increments result from applicable changes to sources of the pollutant of concern. The effect of applicable changes on PSD increments are tracked by calculating net air quality impacts through the use of air quality dispersion models. Net changes can result in either a lower air quality impact, referred to as increment expansion, or a higher air quality impact, referred to as increment consumption. The rules in 40 CFR 52.21 establish the maximum allowable increment consumption for SO_2, NO_2, and PM_{10} under various averaging periods.

PSD increment net changes are tracked relative to baseline impact conditions on two key baseline dates, one for minor sources of the pollutant of concern and one for major sources of the pollutant of concern. This results in the establishment of minor source baseline dates and major source baseline dates for each pollutant, SO_2, NO_2, and PM_{10}. Minor source baseline dates are established according to permitting activities in each planning area, while major source baseline dates have been established within the CFR for each pollutant on a nationwide basis. Emission inventories were established for the pollutants of concern relative to nationwide major source baseline dates and planning area minor source baseline dates.

PSD increment impacts are not tracked and have no regulatory bearing in a given planning area before the minor source baseline date is established in that planning area for a particular pollutant. After the minor source baseline date for SO_2, NO_2, or PM_{10} is triggered in a planning area, PSD increment of that pollutant in that triggered planning area is impacted due to emissions changes at:

1. Minor stationary sources and any area or mobile sources within the triggered planning area following the minor source baseline date for a particular pollutant for that planning area.

2. Major sources within or outside the planning area following the major source baseline date for a particular pollutant.

Minor source and major source baseline dates have different source change criteria that effect PSD increment. The changes in impacts of triggered pollutants can be associated with construction at major stationary sources after the major source baseline date, or with any changes after the minor source baseline date at major and minor stationary sources and any area or mobile sources of the triggered pollutant.

Major source baseline dates establish the basis for tracking impacts from construction at major sources and were set when the PSD increment consumption regulations were promulgated for the given pollutant. Baseline source data on major sources that existed as of the major source baseline date are tracked in order to know the baseline impacts. Changes in emissions and source parameters associated with construction at major stationary sources are tracked after the major source baseline date. The impacts from changes to source emissions and parameters associated with construction since the major source baseline date are what impacts increment from the major sources that existed as of the major source baseline date. The baseline dates for major sources are set nationwide as follows:

- January 6, 1975 – for SO_2 and PM_{10}
- February 9, 1988 – for NO_2

The increment is not affected in a planning area until the minor source baseline date for a particular pollutant, SO_2, NO_2, or PM_{10}, is triggered for that planning area. When a major stationary source submits a major PSD permit modification of SO_2, NO_2, or PM_{10} emissions, or a new stationary source submits a permit application that shows it is a major source for SO_2, NO_2, or PM_{10} and the application is deemed complete, the pollutant-specific minor source baseline date is triggered in the planning area the major source is located in. Planning areas that have a triggered minor source baseline date are those where an applicable new or modified stationary source is located, and where the change in increment consuming emissions has an increased impact of 1 microgram per cubic meter ($\mu g/m^3$) or more.

Minor source baseline dates mark the beginning of increment consumption or expansion. After the minor source baseline date is triggered, increment is consumed and/or expanded in the planning area by impacts attributable to changes at any major sources or at minor and fugitive sources in the planning area.

Tracking increments requires maintaining records on changes to all major sources and changes to minor sources and fugitive emissions located in a triggered planning area.

Minor source baseline dates applicable to this study area are:

- January 1, 1978 – HA64 was triggered for SO_2 by a PSD permit application from Sierra Pacific Power Company for the Valmy Generating Station.
- January 1, 1978 – HA64 was triggered for PM_{10} by a PSD permit application from Sierra Pacific Power Company for the Valmy Generating Station.

3.0 EMISSIONS INVENTORY

Dispersion modeling was used to establish the current status of PSD increment consumption in HA64. Emission rates used in each of the modeled scenarios were based on the emission inventories that were compiled for the current date and the baseline date for each applicable pollutant. The following sections explain how the emission inventories were established, and describe the source types included in the inventories.

In the HA64 analysis of NDEP-regulated sources, Tetra Tech researched actual baseline emissions data and determined that the only available data were found in historical air permits. Available data were obtained from historical permit records because of the age of the information. The baseline data are from 1976 and 1977 unlike the Truckee River Corridor, which has more recent baseline dates. Therefore, the HA64 study compares permitted baseline emissions data to permitted current emissions data to determine the extent of increment consumption in HA64. When information about the startup date of a stationary source was not available, it was assumed that all the source's emissions consume increment. This method maximizes predicted increment consumption for that stationary source. Permitted emissions from 2000 and 2001 were used in developing the current date inventories for PSD triggered pollutants.

3.1 METHODOLOGY

Tetra Tech began the stationary source data search by reviewing various databases and other sources of information to gather names of facilities in HA64. Sources of information included the NDEP Paradox database and the NDEP permitting files for the major and minor baseline dates. The information gathered from the files provided a comprehensive background for stationary sources within HA64 for the emission inventories.

Tetra Tech searched for data on fugitive emissions by investigating the availability of information in EPA's NET Tier database. The NET Tier database includes information that is pertinent to the emissions study for HA64. The report provides annual area and point source emission totals for each county on a pollutant-by-pollutant basis, as well as information about the origin of the pollutant. The report organizes each source into one of 14 major Tier 1 categories, and further classifies the sources with one of 75 more detailed Tier 2 categories. Tetra Tech was able to identify railroad, vehicle, and miscellaneous fugitive emissions on a countywide basis with this information. Table 3-1 presents various data fields in the NET Tier report.

TABLE 3-1

EXAMPLE NATIONAL EMISSION TREND TIER REPORT FOR CURRENT LANDER COUNTY PM_{10} EMISSIONS

Tier-1	Tier-2	County	State	Area Source Emissions (tpy)
02-Fuel Comb. Industrial	01-Coal	Lander Co	NV	2
02-Fuel Comb. Industrial	02-Oil	Lander Co	NV	1
02-Fuel Comb. Industrial	03-Gas	Lander Co	NV	0.19
03-Fuel Comb. Other	02-Commercial/Institutional Oil	Lander Co	NV	0.03
03-Fuel Comb. Other	03-Commercial/Institutional Gas	Lander Co	NV	0.06
03-Fuel Comb. Other	05-Residential Wood	Lander Co	NV	21
03-Fuel Comb. Other	06-Residential Other	Lander Co	NV	0.46
05-Metals Processing	01-Non-Ferrous Metals Processing	Lander Co	NV	0
07-Other Industrial Processes	05-Mineral Products	Lander Co	NV	0
10-Waste Disposal & Recycling	01-Incineration	Lander Co	NV	2
10-Waste Disposal & Recycling	02-Open Burning	Lander Co	NV	10
11-Highway Vehicles	01-Light-Duty Gas Vehicles & Motorcycles	Lander Co	NV	4
11-Highway Vehicles	02-Light-Duty Gas Trucks	Lander Co	NV	3
11-Highway Vehicles	03-Heavy-Duty Gas Vehicles	Lander Co	NV	1
11-Highway Vehicles	04-Diesels	Lander Co	NV	19
12-Off-Highway	01-Non-Road Gasoline	Lander Co	NV	4
12-Off-Highway	02-Non-Road Diesel	Lander Co	NV	11
12-Off-Highway	03-Aircraft	Lander Co	NV	0.21
14-Miscellaneous	01-Agriculture & Forestry	Lander Co	NV	174
14-Miscellaneous	02-Other Combustion	Lander Co	NV	9
14-Miscellaneous	07-Fugitive Dust	Lander Co	NV	2235

The NET Tier database has been used to track fugitive emissions since 1985, when EPA promulgated the emissions reporting program (http://www.epa.gov/air/data). The NET Tier database search was completed for current SO_2 and PM_{10} emissions. The following sections present more details about stationary source and fugitive emissions.

3.2 STATIONARY SOURCE EMISSION INVENTORY

NDEP historical files, along with the NDEP Paradox database, provided lists of state-permitted facilities (NDEP 2000). Historical air quality permits for facilities in the study area at NDEP provided emission rates and source parameters for stationary sources for the baseline emission inventories. Major and minor sources were reviewed for HA64 for major and minor baseline dates. Additionally, major sources within a 50-km radius of the HA64 were reviewed for each of the inventories. Emission data gathered for the 1978 baseline year included primarily energy-generating sources and mining operations.

Emissions data for all known sources that currently exist were gathered to create the current inventory. The period for the current inventory is 2000 through 2001 because the databases used in the estimates of emissions have been largely updated with 2001 data. The current inventory is based on permitted emission rates. Tetra Tech assumed the source is increment consuming when information about the startup date of the stationary source was not available.

3.2.1 Nevada Division of Environmental Protection Stationary Source Data Collection

The Nevada State Legislature has full BAPC jurisdiction over all counties in the State of Nevada except for Washoe and Clark Counties but maintains jurisdiction over fossil fuel-fired steam generating electric plants in Washoe and Clark Counties. HA64 falls under the jurisdiction of BAPC. HA64 contains one major source, Sierra Pacific Power Company's Valmy Generating Station (Valmy). The only other major stationary source within a 50-km radius of HA64 is Coastal Chem Inc. There are several smaller stationary sources inside HA64 that were also included in the emission inventory and modeling analysis for this study.

To establish the stationary source inventory, BAPC emission source data, historical air quality permits, and recent annual emission inventories for SO_2 and PM_{10} were reviewed. Stationary sources located in HA64 were ranked according to permitted facility-wide annual emissions of SO_2 and PM_{10}. This procedure allowed Tetra Tech to identify the stationary sources that were major sources of a particular

pollutant. Source histories from the Title V operating permit program were also reviewed to determine permitted emissions for facilities. For Class II sources, available permits were reviewed for approval dates to identify facilities that should be included in a baseline inventory. For current scenario emissions, permitted emission rates for all stationary facilities that emit SO_2 and PM_{10} that were in operation during 2000 and 2001 were used.

After all stationary sources were accounted for and emission inventories for baseline and current scenarios were established, modeling-related source parameter data were gathered for each stationary source. The modeling parameters include emission rates for each point source, Universal Transverse Mercator (UTM) Zone 11 coordinates for emission points, stationary source fencelines, building locations, stack heights, stack diameters, stack gas exist velocities, and stack gas exit temperatures. Appendix C shows the stationary emission sources and parameters included in each baseline and current modeling scenario.

3.3 FUGITIVE SOURCE INVENTORY

Fugitive sources in HA64 were assigned to one of three categories: railroad, vehicle, and miscellaneous sources. Railroad emissions were apportioned into 1-km by 1-km grid cells based on the proportion of county railroad miles in the HAs and the total railroad miles traveled annually. Vehicle emissions were apportioned into the same grid cells based on the proportion of road miles in each grid cell and the total vehicle miles traveled annually in each grid cell. Miscellaneous fugitive emissions were distributed into the grid cells according to population density. Emissions from railroads, vehicles, and miscellaneous sources were then totaled to give a single emission rate for each 1-km by 1-km grid cell.

EPA's NET Tier database provided most of the data for the area source analysis. However, NET Tier only has data back to 1985. Because the baseline date for HA64 occurs in 1978, data representing the actual baseline date were not available. As a conservative screening level analysis, only current area sources were modeled, which maximized increment consumption predictions. The results showed that area sources do not contribute significantly to PSD increment consumption. If current area source emissions had contributed significantly, a more complete inventory of baseline emissions would have been developed and modeled. This refined analysis would be a less conservative and more accurate representation of how area sources contribute to the PSD increments. This step was not necessary for the HA64 area source analysis. The following sections explain the calculations of fugitive source emissions in more detail.

3.3.1 Railroad Source Analysis

Tetra Tech used a two-step process to calculate railroad emissions for each grid cell of HA64. The first step was to calculate emissions in the fraction of each county that makes up HA64. HA64 encompasses portions of 3 different counties. It is important to identify the counties through which railroads pass in HA64 because the emissions data available from the NET Tier database are organized by county. Railroad tracks in HA64 span portions of Elko, Humboldt, and Lander counties. The second step was to break down the emissions from the portion of each county that makes up HA64 even further by apportioning the emissions into 1-km by 1-km grid cells.

To accomplish the first step and calculate emissions in the fraction of each county that makes up HA64 ($RE_{countyfraction}$), Tetra Tech determined the total rail length in each county (RL_{county}), the length of railroad in the fraction of each county that makes up HA64 ($RL_{countyfraction}$), and the total railroad emissions for each county (RE_{county}). Spatial census data from the year 2000 was used to estimate RL_{county}. Next, $RL_{countyfraction}$ was computed for HA64 using GIS applications. Tetra Tech downloaded RE_{county} from the NET Tier database, and data for each pollutant and baseline date were extracted. The following equation shows how $RE_{countyfraction}$ for HA64 were calculated. The calculation was repeated for each county in HA64.

$$RE_{countyfraction} = RE_{county} \frac{RL_{countyfraction}}{RL_{county}}$$

The second step, apportioning $RE_{countyfraction}$ into the 1-km by 1-km grid cells in HA64 ($RE_{gridcell}$), required Tetra Tech to use $RL_{countyfraction}$, $RE_{countyfraction}$, and the rail length in each grid cell ($RL_{gridcell}$) in a calculation similar to that of the first step. $RL_{countyfraction}$, for each county area were determined for the first step, $RE_{countyfraction}$ for each county area were the results of the first calculation, and $RL_{gridcell}$ were determined using GIS applications. The equation below demonstrates how $RE_{gridcell}$ were calculated.

$$RE_{gridcell} = RE_{countyfraction} \frac{RL_{gridcell}}{RL_{countyfraction}}$$

Railroad source emissions calculations for the study area can be found in Appendix D.

3.3.2 Mobile Sources Analysis

The mobile source analysis for the increment study was a four-step process, including a data collection phase and three sets of calculations. The result of this process allowed vehicle emissions for each pollutant to be apportioned into the 1-km by 1-km grid cells used in the railroad analysis.

Data on vehicle miles traveled (VMT) and countywide vehicle emissions data for each pollutant were both needed for this analysis. First, Tetra Tech acquired annual VMT for Nevada from the 2000 Federal Highway Administration Highway Statistics publication (most recent publication) from the U.S. Department of Transportation (DOT 2000). VMT data were divided into three road types to account for their differing contributions to mobile source emissions: interstate, highway, and arterial street. Next, countywide vehicle emissions data for each pollutant were gathered from the NET Tier database for the year 1999 (most recent year in NET Tier).

The first set of calculations broke down VMT into road miles per county, HA, and grid cell. The VMT were also broken down into the three different road types. GIS techniques were used to apportion VMT data collected for Nevada into these area and road type categories. This set of calculations resulted in numeric values for:

- Interstate VMT for each county
- Highway VMT for each county
- Arterial Street VMT for each county
- Interstate VMT for each HA
- Highway VMT for each HA
- Arterial Street VMT for each HA
- Interstate VMT for each grid cell
- Highway VMT for each grid cell
- Arterial Street VMT for each grid cell

The second set of calculations broke down countywide vehicle emissions into HA-wide emissions for each road type using ratios. The ratio of HA VMT to county VMT for each road type was multiplied by the ratio of HA VMT per road type to total HA VMT. The product of these two ratios was then multiplied by countywide emissions to give HA-wide emissions per road type (Equation 1).

(1) $$\frac{TotalHAVMT}{TotalCountyVMT} * \frac{HARoadTypeVMT}{TotalHAVMT} * CountyEmissions = HARoadTypeEmissions$$

The third set of calculations resulted in the final apportionment of all vehicle emissions into the 1-km by 1-km grid cells. A ratio of grid cell VMT to HA VMT was calculated for each grid cell and road type using the numeric values from the first set of calculations. These ratios were then multiplied by the HA-wide emissions for each road type derived from the second set of calculations to yield grid cell emissions for each road type (Equation 2). The emissions values in each grid cell for interstate, highway, and arterial streets were summed to calculate the total vehicle emissions present in each grid cell (Equation 3).

(2) $$\frac{GridCellInterstateVMT}{HAInterstateVMT} * HAInterstateEmissions = InterstateGridCellEmissions$$

$$\frac{GridCellHighwayVMT}{HAHighwayVMT} * HAHighwayEmissions = HighwayGridCellEmissions$$

$$\frac{GridCellArterialVMT}{HAArterialVMT} * HAArterialEmissions = ArterialGridCellEmissions$$

(3) $$\begin{array}{l} InterstateGridCellEmissions \\ HighwayGridCellEmissions \\ +\ \underline{ArterialStreetGridCellEmissions} \\ TotalEmissionsForEachGridCell \end{array}$$

Mobile source emissions data tables and calculations are available in Appendix E.

3.3.3 Miscellaneous Sources Analysis

The miscellaneous source analysis for the increment study was a four-step process, including one data collection initiative and two sets of calculations, and GIS techniques. The result of this process allowed miscellaneous emissions for each pollutant to be apportioned into 1-km by 1-km grid cells.

Data for population density and countywide miscellaneous emissions for each pollutant were used in this analysis. To calculate emissions from miscellaneous sources for the 1-km by 1-km grid cells, Tetra Tech

first acquired countywide miscellaneous emissions data for each pollutant from the NET Tier database for the years 1999, the most recent data set available.

To apportion these emissions by population density, Tetra Tech collected census population data from the U.S. Census Bureau for HA64 (USCB 2001). Census block data were used to calculate population density because census blocks are the smallest unit of census geography. Using census block data, Tetra Tech was able to calculate population density in the study area.

The calculations distributed countywide miscellaneous emissions into each census block for the current emission inventory. Because countywide miscellaneous emissions were apportioned based on population density, a ratio of census block population to county population was needed. This ratio was then multiplied by the county emissions to apportioned them to each census block (Equation 4).

$$(4)\quad \frac{BlockPopulation}{CountyPopulation} * CountyEmissions = BlockEmissions$$

Using GIS techniques, the 1-km by 1-km grid cells were overlaid onto a map displaying population and emissions for each census block. Each grid cell was intersected with a specific census block, and the corresponding percentage of population was allocated to the grid cell. Emissions from miscellaneous sources were then distributed according to population density for each grid cell using GIS methods. Miscellaneous source emission calculations are shown in Appendix F.

4.0 AIR QUALITY MODELING

Air dispersion modeling was conducted to assess SO_2 and PM_{10} PSD increment consumption in HA64. The modeling study also identified portions of the planning area where the PSD increment has been expanded since the baseline date. The following sections discuss the model selection, model setup, and model application.

4.1 MODEL SELECTION

Several options were considered for the appropriate dispersion model for this analysis. Because there are significant terrain features in HA64, a model suited for addressing complex terrain issues was essential. The Industrial Source Complex Model (ISC3) was eliminated from consideration because it is not able to address complex terrain as well as other models considered. The enhanced Complex Terrain Dispersion Model (CTDMPLUS) has been used for complex terrain modeling in the region, but is cumbersome to run and must be used in conjunction with another model for simple terrain applications. After considering several options, a next-generation dispersion model called AERMOD was selected for this PSD increment consumption modeling analysis. AERMOD combines the ability to address both complex terrain and simple terrain issues, and has improved dispersion algorithms for addressing boundary-layer meteorology. It is currently in the process of receiving official EPA approval for regulatory analysis, and is now being used in several states for compliance modeling.

AERMOD is a Gaussian plume dispersion model that is based on planetary boundary layer principles for characterizing atmospheric stability. The model evaluates the non-Gaussian vertical behavior of plumes during convective conditions with the probability density function and the superposition of several Gaussian plumes (Federal Register 2000). AERMOD is a modeling system with three components: AERMAP is the terrain preprocessor program, AERMET is the meteorological data preprocessor, and AERMOD includes the dispersion modeling algorithms.

AERMOD was developed to handle simple and complex terrain issues using improved algorithms. As with CTDMPLUS, AERMOD uses the dividing streamline concept to address plume interactions with elevated terrain. However, AERMOD is less cumbersome to use than CTDMPLUS.

On April 21, 2000 EPA proposed revising the *Guideline On Air Quality Models* (40 CFR, Part 51, Appendix W) to replace the ISC3 model with AERMOD as the preferred model for many air quality

impact assessments including complex terrain applications. EPA's proposal came after the results of model evaluation studies indicated that AERMOD performs better than ISC3, and also as well or better than CTDMPLUS in complex terrain applications. AERMOD will replace ISC3 as the preferred state-of-the-practice dispersion model for evaluating potential impacts from industrial sources within a 50-km radius of the source.

After concluding that AERMOD was the model best suited for use in this PSD increment consumption study, BAPC sought approval for its use from EPA Region 9. After reviewing the goals of the project and the changing EPA guidance on the application of dispersion models, EPA Region 9 approved the use of AERMOD for this study.

Use of AERMOD for the study has two distinct advantages. The first advantage is that AERMOD uses improved model algorithms that more closely simulate plume dispersion in the atmosphere than many other models; and the second advantage is that modeling data developed for this study will not become outdated when AERMOD is officially recognized as the standard model for PSD increment applications.

4.2 MODELING METHODOLOGY

The dispersion modeling analysis was performed to estimate the PSD increment consumed or expanded from industrial and other pollutant emission sources in the planning area. Modeling was performed to evaluate incremental impacts of SO_2 and PM_{10}, as triggered in HA64, for all applicable averaging periods. The applicable averaging periods and associated PSD increments addressed in this study are shown in Table 4-1.

Separate model runs were executed for SO_2 and PM_{10} for both the baseline year and the current year emission inventories and for short-term and long-term averaging periods. One current and one baseline model were run for each facility where applicable. This allowed for an easy integration of changes that were made to the model on a facility-by-facility basis after the initial model runs. In all, a total of 52 model runs were completed. These model runs were based on emissions of PSD triggered pollutants as described in Section 3.0. Emissions from all sources that were operating as of the baseline date were included in the baseline year modeling runs. Emissions from all applicable sources operating as of the study year 2001 were modeled in the current year modeling runs. Output files from these two sets of modeling were post-processed to subtract baseline year impacts from current year impacts, resulting in PSD increment consumption. Using this methodology provides output that can account for PSD increment expansion as well as increment consumption.

TABLE 4-1

PREVENTION OF SIGNIFICANT DETERIORATION INCREMENTS

Averaging Period	Prevention of Significant Deterioration Increment ($\mu g/m^3$)	
	SO_2	PM_{10}
3-Hour	512	N/A
24-Hour	91	30
Annual	20	17

Notes:

N/A Not applicable
$\mu g/m^3$ micrograms per cubic meter

When conducting modeling for increment tracking, all PSD increment consuming and expanding emissions located in the specified planning area were included in the analysis. In addition, all PSD increment consuming and expanding emissions from major stationary sources within 50 km of HA64 were included in the analysis.

4.3 MODEL SETUP AND APPLICATION

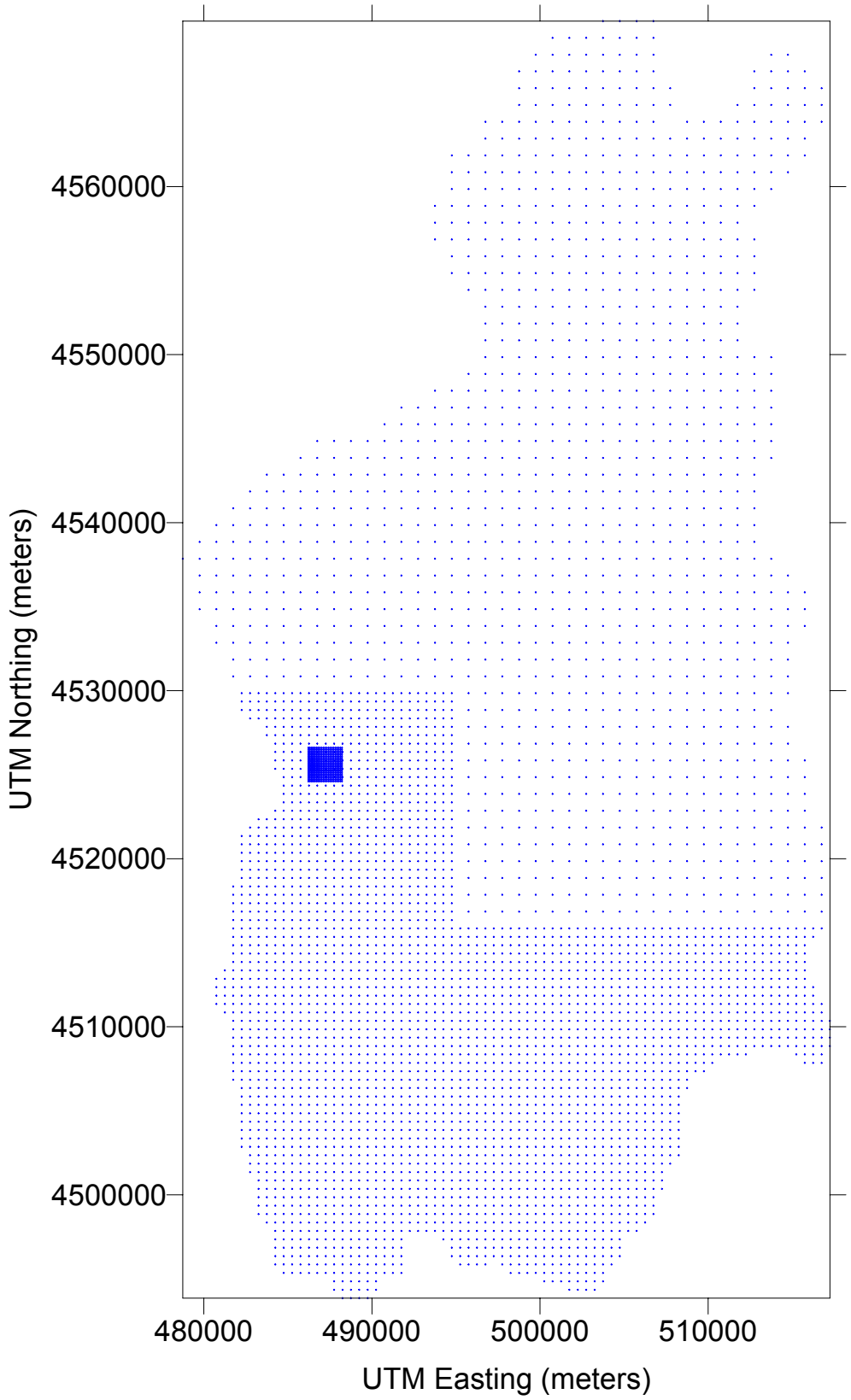
The AERMOD model contains three modules: two pre-processors and the dispersion model. Model receptors are developed with the AERMAP pre-processor, meteorological data are developed with the AERMET pre-processor, and the model algorithms are applied with AERMOD. Applications of these three modules are discussed in the following sections.

4.3.1 AERMAP

The terrain preprocessor AERMAP was used to extract receptor elevation data from USGS Digital Elevation Model (DEM) files for use as input to AERMOD. DEM data files were downloaded from the USGS Internet site in 7.5-minute resolution (1-degree resolution is also available). The selected data files covered the complete geographic study area. Receptor locations for the study area were based on North American Datum of 1983 (NAD 83); however, because the DEM data available through the USGS are based on North American Datum of 1927 (NAD 27), Tetra Tech converted the receptor locations to NAD 27 for processing with the NAD 27 DEM files. Following processing, the receptor coordinates were converted back to NAD 83. Upon successful completion of the program, AERMAP generated a text output file containing a receptor elevation for each receptor coordinate in the receptor grid files. In addition, AERMAP generated a height scale for each receptor. A height scale is a measure of the height and distance of the local terrain feature that has the greatest influence on dispersion for that receptor.

The receptor grid covered the entire HA64 area. There were three different methods of receptor spacing within the grid. A fine grid was created for the area around the Valmy Power Plant. These receptors are spaced 100 meters apart and the grid is 2-km by 2-km with Valmy situated in the center of the grid. A less dense grid was assembled to cover the southern third of HA64. The receptors in the southern third of HA64 were spaced 500 meters apart. A receptor grid with 1,000 meter spacing covered the remainder of HA64. Receptors located inside stationary source fencelines were not eliminated from the initial modeling analysis. Figure 4-1 shows the receptor grid used for the HA64 analysis.

FIGURE 4-1
HA64 Receptor Grid



4.3.2 AERMET

The meteorological data pre-processor AERMET was used to develop meteorological input data for the AERMOD modeling analysis. The AERMET software processes surface meteorological data and twice-daily upper air sounding data into the proper format using a three-stage process. The first stage extracts the data and administers several data quality checks. The second stage merges the data, and the third stage estimates required boundary layer parameters and writes the data in a format readable by AERMOD.

Meteorological data collected from Valmy during 2001 were used for the modeling analysis. These data were processed into model-ready format using AERMET. An additional surface dataset collected from the National Weather Service (NWS) station in Winnemucca was used as input to AERMET. This dataset was used to substitute for any missing values from the Valmy data, and to provide additional information for AERMET processing. The final surface data requirement included estimates of the albedo of the ground, Bowen ratio, and surface roughness. These input values were estimated using guidance in the *User's Guide for the AERMOD Meteorological Preprocessor (AERMET)*. The last input data requirement for AERMET is twice-daily upper air sounding data. Sounding data were obtained from the National Climatic Data Center (NCDC), and include upper air soundings from Reno, Nevada for the year 2001.

On-Site Surface Data

The Valmy meteorological tower collects data from many atmospheric variables. Most of the collected data were used in AERMET processing, including wind speed and wind direction at three levels (10, 50, and 100 meters), barometric pressure, temperature, relative humidity, standard deviation of horizontal wind direction at all three levels, and standard deviation of vertical wind speed at all three levels. Use of data at three wind levels provides a better estimate of boundary layer conditions.

NWS Surface Data

AERMET is designed to extract NWS surface data from several different formats including CD-144, SCRAM, and SAMSON. NCDC's standard data storage format has been CD-144 format for many years. However, NCDC no longer uses this format and any newer data is stored in TD-3280 format, which is not easily converted to a format usable by AERMET. Since the 2001 NWS Winnemucca data were stored in the new format, they had to be converted to CD-144 format. After NWS Winnemucca surface data were

converted to a usable format, they were extracted, quality checked, and merged with quality checked on-site data.

NWS Upper Air Data

Reno, Nevada upper air sounding data for 2001 were obtained in TD-6201 format. These data were extracted by AERMET, quality checked, and merged with the two surface datasets.

After all three datasets were merged, the final processing stage was executed to produce the model ready data. This final stage calculates boundary layer parameters that are subsequently used by AERMOD. The final processing stage was completed with modified AERMET software that corrected problems that occurred when missing data were encountered in the upper air soundings.

4.3.3 AERMOD

AERMOD was run using the regulatory default mode. Emission sources, model receptors, and meteorological data were contained in separate files and opened during model execution. Output from the model was stored in binary files and used for post-processing. See Section 4.5 for a discussion of post-processing techniques.

4.4 EMISSION SOURCE CHARACTERIZATION

A PSD increment emission inventory was developed for each applicable pollutant for input into AERMOD (see section 3). Emission source data collected by Tetra Tech were used to establish an emission inventory that details emissions and source parameters for the following:

- SO_2 and PM_{10} emissions and source parameters for major stationary sources that existed on the HA64 major source baseline date of January 6, 1975
- SO_2 and PM_{10} emissions and source parameters for major and minor stationary sources that existed on:
  - The HA64 SO_2 minor source baseline date of January 1, 1978
  - The HA64 PM_{10} minor source baseline date of January 1, 1978
- SO_2 and PM_{10} emissions and source parameters from major and minor stationary sources, area sources, and mobile sources that existed in the HA64 most current model year 2001

Dispersion modeling was conducted using the emission inventories listed above to identify increment consuming and expanding sources.

The emission inventories represent potential emissions for the current inventory and permitted emissions for the baseline inventories. Because historical records for sources dating back to 1976 and 1977 did not contain any actual emissions data, permitted emissions were used. Baseline sources that are fully represented with allowable emissions instead of actual emissions are:

- Battle Mountain Gold Company
- M-I Drilling Fluids Company

The emission inventories were constructed for the modeling study with three basic types of emission sources: industrial sources; mobile sources such as on-road vehicles and locomotives; and county-wide emission sources representing all other emissions that cannot be individually quantified. The following subsections detail how these emission types were characterized in the dispersion modeling analysis.

4.4.1 Industrial Sources

Industrial sources were input to the model using source parameters and emission data obtained during Tetra Tech's data collection activities. Current emissions were based on the most recent available data on a source's permitted allowable emissions. Most of this information came from a file search performed by Tetra Tech at NDEP headquarters. Some information was obtained from the Paradox database, which keeps track of current permitted emissions and source parameters. The date of emissions information used in the analysis was documented for each stationary source.

Baseline emission source data represent stationary source operations as of a given baseline date, and were based on available records from the closest date prior to the baseline date. In other words, Tetra Tech used emission data as near to the baseline date as possible where records exist, but before the baseline trigger date. In some cases, the only recorded emission data are two to three years prior to the baseline date.

Generally, industrial sources were modeled using AERMOD's point source algorithms. Stack-type emissions from the industrial facilities were modeled as point sources using stack parameters obtained during data collection activities. In some cases, stack parameters are different between the baseline year and the current year. In these cases, the modeling took into account the changes in stack parameters (provided both sets of stack parameters were reliable) to more accurately reflect the impact the changes

had on the increment. Process fugitive emission units (such as conveyor transfer points) were also modeled as point sources. Typically, NDEP models process fugitive emission units as appropriately represented volume sources. However, due to the complexity of the modeling analysis and the additional detailed descriptive information that would need to be determined for these types of emission units, NDEP decided it was more prudent to represent these emission unit types as pseudo-stack sources. As such, these types of emission units were assigned low values for stack velocity and diameter, which tends to limit plume buoyancy and better represent the emission source. Therefore, following guidance from NDEP, process fugitive emission units were assigned a 10 meter stack height, ambient temperature, 0.01 meters per second exit velocity, and 1.0 meter stack diameter, which represents an average equivalent diameter for these types of sources.

Some sources are limited to fewer than 24 daily operation hours and it is impossible to know which hours a source will operate. Therefore, each source in the inventory that is limited to less than 24 operation hours per day was carefully evaluated. It was determined that these sources have an insignificant impact on PSD increment consumption due to their low emission rates. As a result, these sources were simulated in the model as if they operated 24-hours per day in order to simplify the model input.

AERMOD currently uses the same direction-specific building downwash algorithms used by the ISC3 model. Although it is NDEP policy to include building downwash in dispersion modeling analyses, it was considered prohibitive to include building downwash for all sources in this study because of the overall large number of sources in the modeling analysis. Due to the potential relative importance of impacts from major sources, Tetra Tech attempted to include building downwash parameters for major sources in the modeling for HA64. However, building downwash parameters were not available for major sources during data collection activities, and were subsequently not included as input to AERMOD to calculate building downwash effects.

4.4.2 Mobile Sources

Mobile source emissions data for the year representing the minor source baseline date are not available from the EPA NET database because the data only goes back to 1985. As a screening level analysis, only current mobile sources were modeled to determine if the impact from mobiles sources is significant. This methodology assumes all mobile source emissions are increment consuming. For the current mobile source analysis, emissions were apportioned into 1-km by 1-km grid cells across HA64. The countywide emissions from the NET Tier database were apportioned into the separate appropriate grid cells by the

ratio of known length of roads in the county to the known length of road in each grid cell, and by the VMT data available from the U.S Department of Transportation (DOT). The EPA State Implementation Plan guidance was used as a technical reference for these analyses. The SIP guidance provides selection of road mileage distribution for emission apportionment as an option, which is consistent with this analysis.

The estimated emissions of SO_2 and PM_{10} from vehicle mobile sources that are apportioned to each 1-km grid cell were added to the total fugitive emissions from that grid cell. The total fugitive emissions of each pollutant from that grid cell were modeled as area sources using AERMOD for separate predicted SO_2, PM_{10}, and NO_2 increment impacts.

4.4.3 Fugitive Sources

As with mobile sources, baseline date fugitive emissions data were not available from the NET Tier database, so only current emissions were modeled in this analysis. All fugitive emissions were assumed to be increment consuming. Current fugitive emissions from the NET Tier database were distributed on a county-by-county basis within the 1-km grid cells for use in AERMOD. As with the mobile source inventory, the established EPA SIP guidance was used as a technical reference. The SIP guidance for rural/small urban emission allocation was used as a protocol to distribute the NET emission data based on population in HA64. For example, assume the study area is exactly 25 percent (%) of the county size, and contains 50% of the county's population. Also assume that population data are organized in exactly the same shape as the study area. Tetra Tech reviewed the population of the study area in relation to the population of the entire county. The emission data allocated to the study area were the same percentage as the population of the study area compared to the population of the entire county, in this example, 50%. These data were then distributed to the grid cells for modeling purposes accordingly so the sum of the emission data for each grid cell in the study area will equal 50% of the county's total emissions, even though the study area only represents 25% of the county’s area.

Each 1-km by 1-km area source used in the modeling was assigned an elevation equal to the average elevation within the grid cell. This approach has been used for fugitive sources in similar studies (SW Colorado Increment consumption study), and is supported by EPA (EPA 2001). Because there are many area sources within HA64, and area sources require considerable processing time for the dispersion model, area sources were excluded from the modeling analysis if they were determined to have an insignificant impact on air quality. For purposes of this study, an area source was estimated to have an

insignificant impact if its emissions would contribute less than or equal to 1% of the applicable PSD increment limit. A source's significance was estimated based on its total emissions and from test model runs. An area source with a total emission rate less than or equal to 6.5E-09 grams per second per square meter was estimated to have an insignificant impact based on model test runs.

4.5 POST-PROCESSING

Model output files from AERMOD were combined in a post-processing step to determine PSD increment consumption. Pollutant impacts from baseline sources were subtracted from pollutant impacts from current sources on a receptor-by-receptor basis, with the difference resulting in PSD increment consumption. In some cases, the baseline impacts were greater than current impacts. This scenario resulted in PSD increment expansion at those receptors.

The post-processor is a FORTRAN executable program that was written in Lahey FORTRAN 90. The name of the program is GETINCSS. The source code for the program is provided in Appendix G.

The purpose of the program is to read input data files, and combine these into predicted increment values at each receptor. GETINCSS combines the predicted baseline-year and current-year impacts into a predicted increment value at each receptor by subtracting the baseline-year impacts from the current-year impacts. It then writes these results to an output file.

The predicted impact files are unformatted output data from the AERMOD dispersion modeling for the averaging period of interest. The program uses the AERMOD modeling receptor set to assign increment values to each receptor. It is critical that the receptor file used is the exact same file used in the AERMOD modeling so that predicted impacts and receptor locations can be properly paired.

Each unformatted predicted impact file must contain predicted concentrations for a single averaging period. The program is designed to work with input data files that contain predicted impacts for one year of meteorological data at every receptor for a single averaging period. The averaging periods may range from 1 hour to 24 hours or the modeling period, typically 1 year. Averaging periods between 24 hours and the modeling period will not work with the post-processor.

GETINCSS uses the files specified in the post-processor input file to create an output file called *incrment.dat*. The following process allows the user to get the predicted increment value:

- Assemble all baseline and current binary output files of the same averaging period into one folder
- Make sure that the GETINCSS executable is in the folder with the files to be processed
- Create an input file named "GETINCSS.inp" that tells the post-processor what files to combine
- Specify a multiplier after each listed binary file
- For baseline files, use a multiplier of –1.0, and for current files, use a multiplier of 1.0
- Double click on the GETINCSS executable icon
- Rename the GETINC1 output file, *incrment.dat*, with identifying characters (see the recommended naming convention in the text below)
- If the AERMOD unformatted files were renamed, rather than copied, rename them again to their original names

It is recommended that the *incrment.dat* output file from GETINCSS be renamed using the following nomenclature:

AAPPINMM.HH

Where:

AA = Two characters representing the air quality control region, such as 64 for HA64

PP = Two characters representing the pollutant modeled, such as SO for SO_2, and PM for PM_{10}

IN = Two characters that would be 'IN' for increment results

MM = Two characters representing the year of the meteorological data used, such as 01 for 2001.

HH = Two characters representing the averaging period of the modeling, such as 24 for 24-hour, 03 for 3-hour and AN for annual

4.6 PSD INCREMENT CONSUMPTION RESULTS

The modeling showed that there are no SO_2 PSD increment exceedences in HA64. Additionally, there are no 24-hour or annual PM_{10} PSD increment exceedences outside facility boundaries in HA64. There are 24-hour PM_{10} PSD increment exceedences within Sierra Pacific Power's Valmy Generating Station

boundary, but they are caused by emissions from the Valmy station and are, therefore, not considered to be violations of PSD increment standards.

The following sections give more details about the modeling results for HA64.

4.6.1 HA64 – SO_2

HA64 was modeled for SO_2 impacts using the protocol described in Section 4.2 through Section 4.5. The modeling, which used stationary source data collected by Tetra Tech and fugitive emissions from the NET Tier database, showed that there were no 3-hour, 24-hour, or annual SO_2 PSD increment exceedences predicted in HA64. Table 4-2 shows the highest modeled SO_2 PSD increment values in HA64. The modeling results for 3-hour, 24-hour, and annual SO_2 increment are shown graphically in Figures 4-2a through 4-4b. The highest, second-high predicted 3-hour SO_2 increment consumption value in HA64 was 203.3 $\mu g/m^3$. The predicted high, second-high 24-hour value for SO_2 increment consumption was 38.5 $\mu g/m^3$, and the highest annual SO_2 increment consumption was 4.8 $\mu g/m^3$. These values were modeled using 2000 meteorological data. The highest SO_2 increment consumption predictions generally occur in the elevated terrain on the south and east sides of HA64. All of these modeled values are less than half of the respective SO_2 PSD increment.

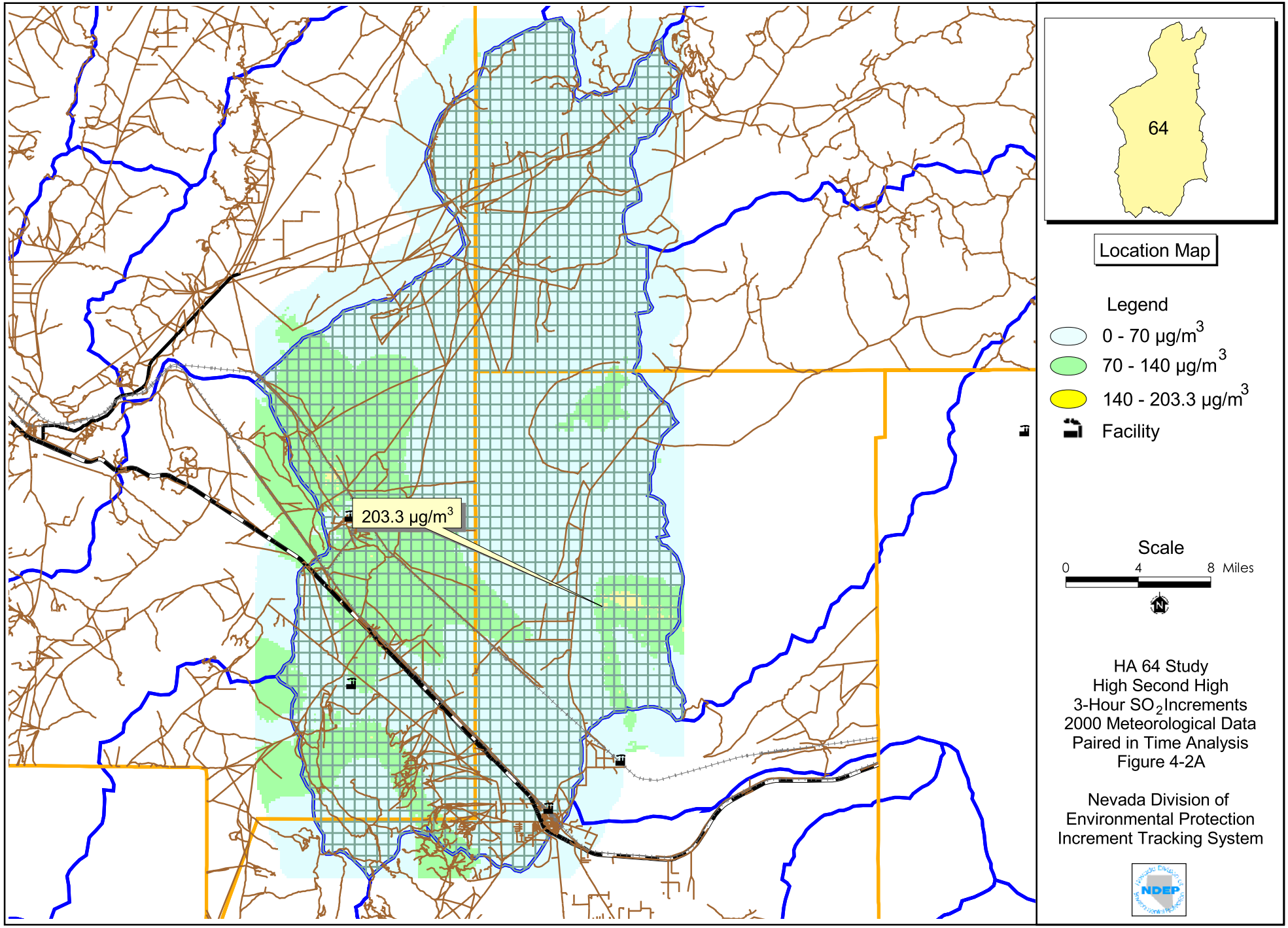
TABLE 4-2

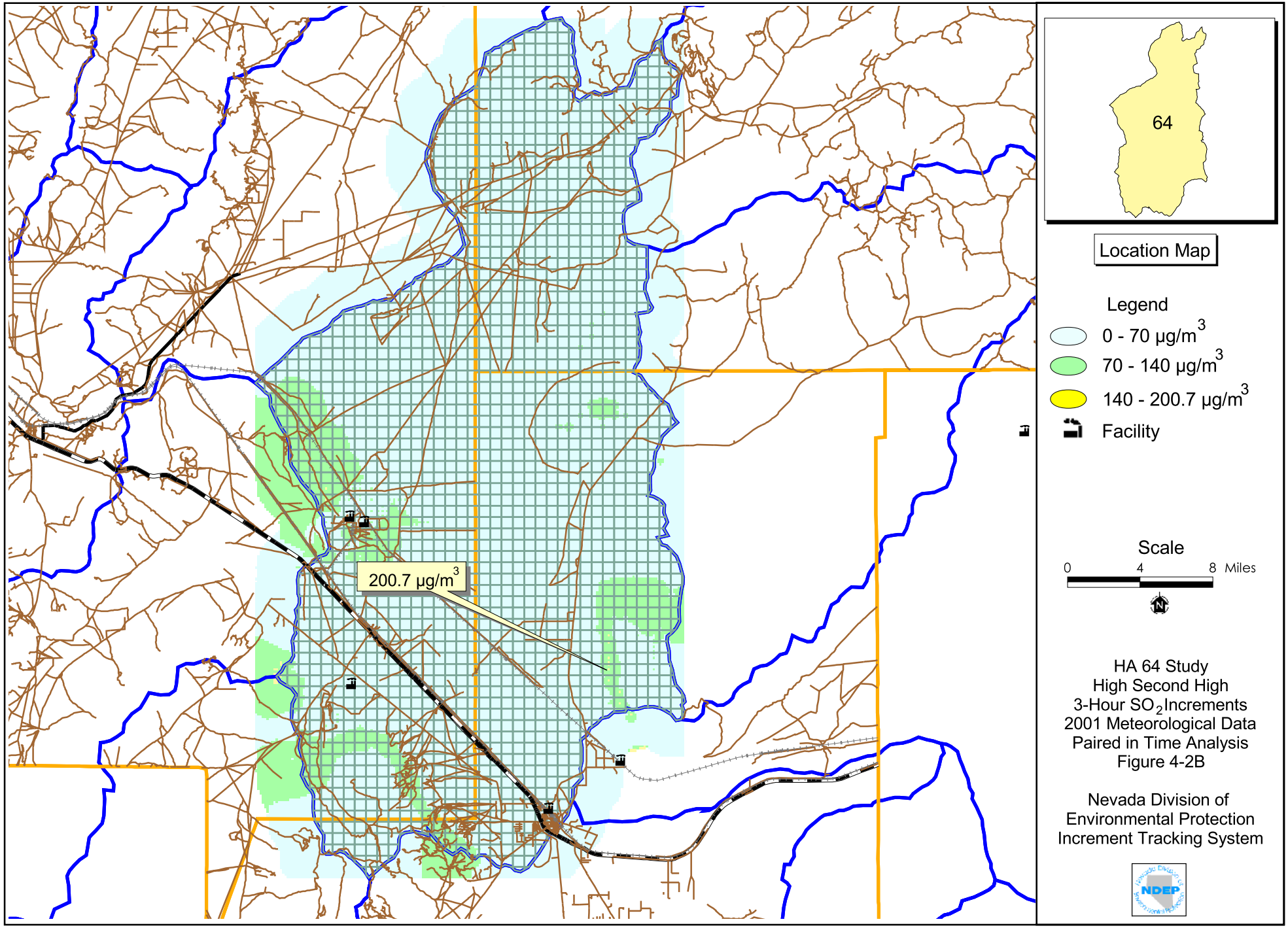
HIGHEST MODELED SO_2 PSD INCREMENT CONSUMPTION VALUES IN HA64 FOR EACH APPLICABLE AVERAGING PERIOD

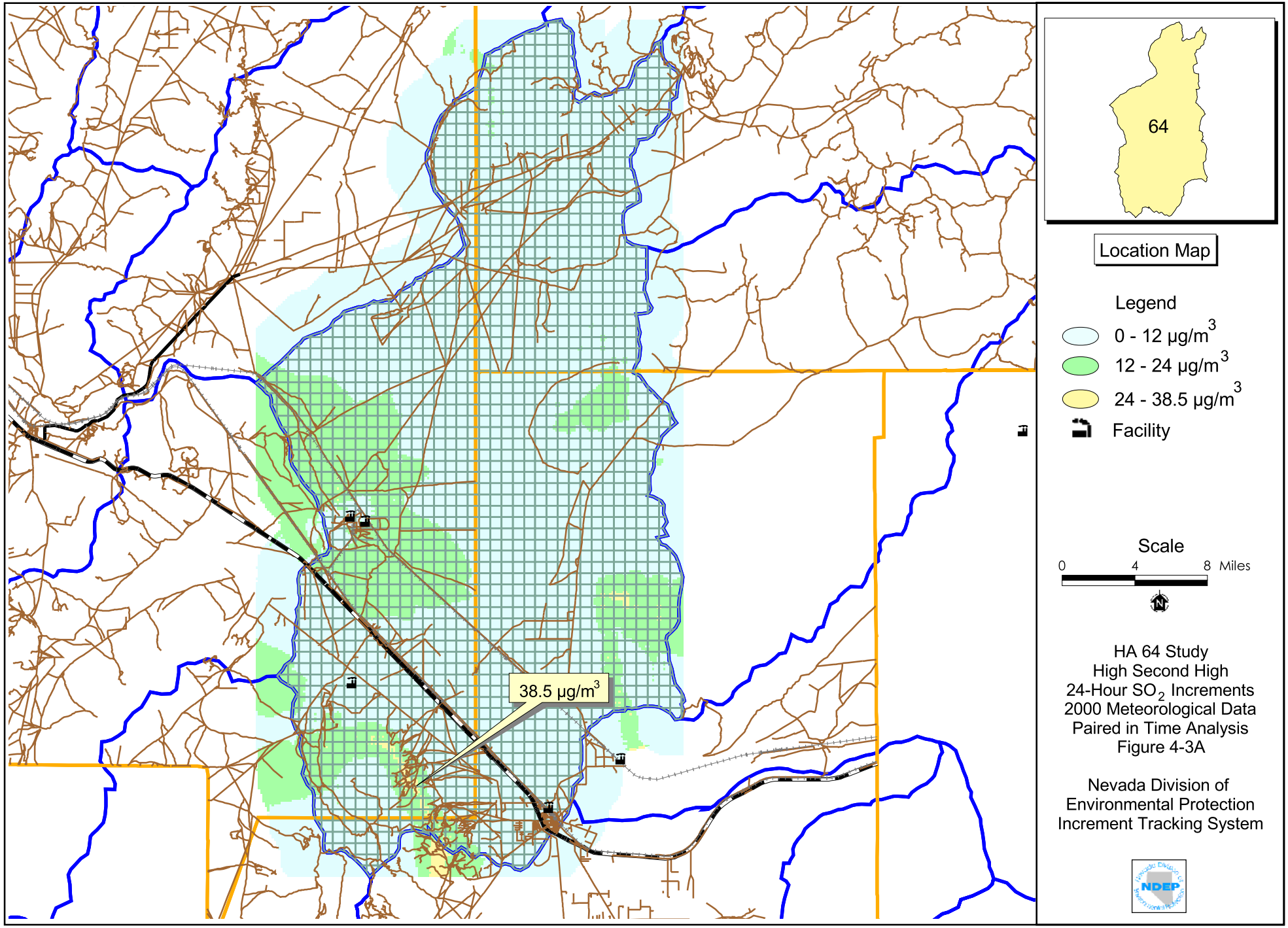
Averaging Period	X – Coordinate (UTM)	Y – Coordinate (UTM)	Total SO_2 Increment Consumption ($\mu g/m^3$)[A]	Meteorological Year
3-Hour	509750	4517850	203.3	2000
24-Hour	493250	4501850	38.5	2000
Annual	490750	4505350	4.8	2000

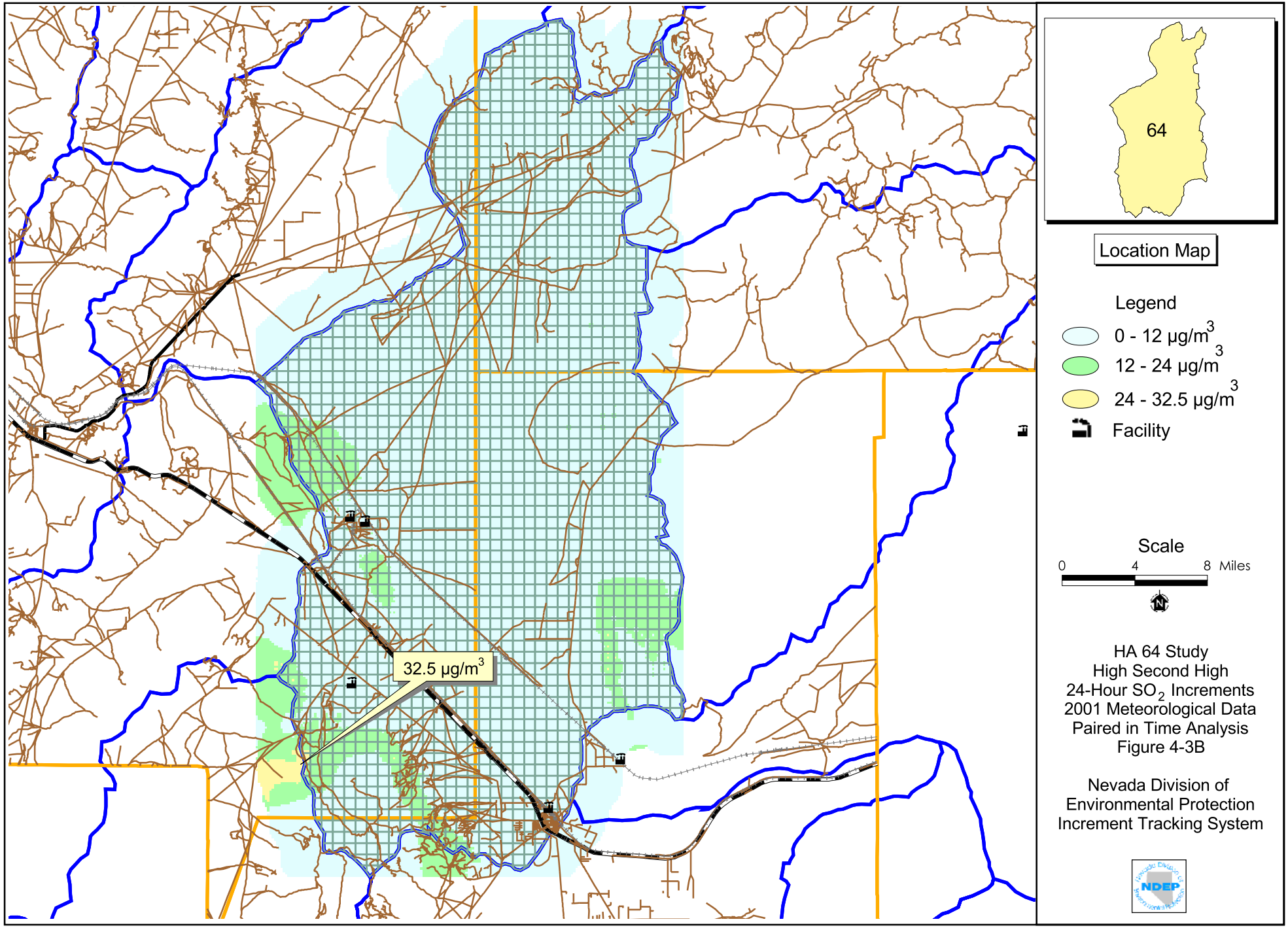
Notes:

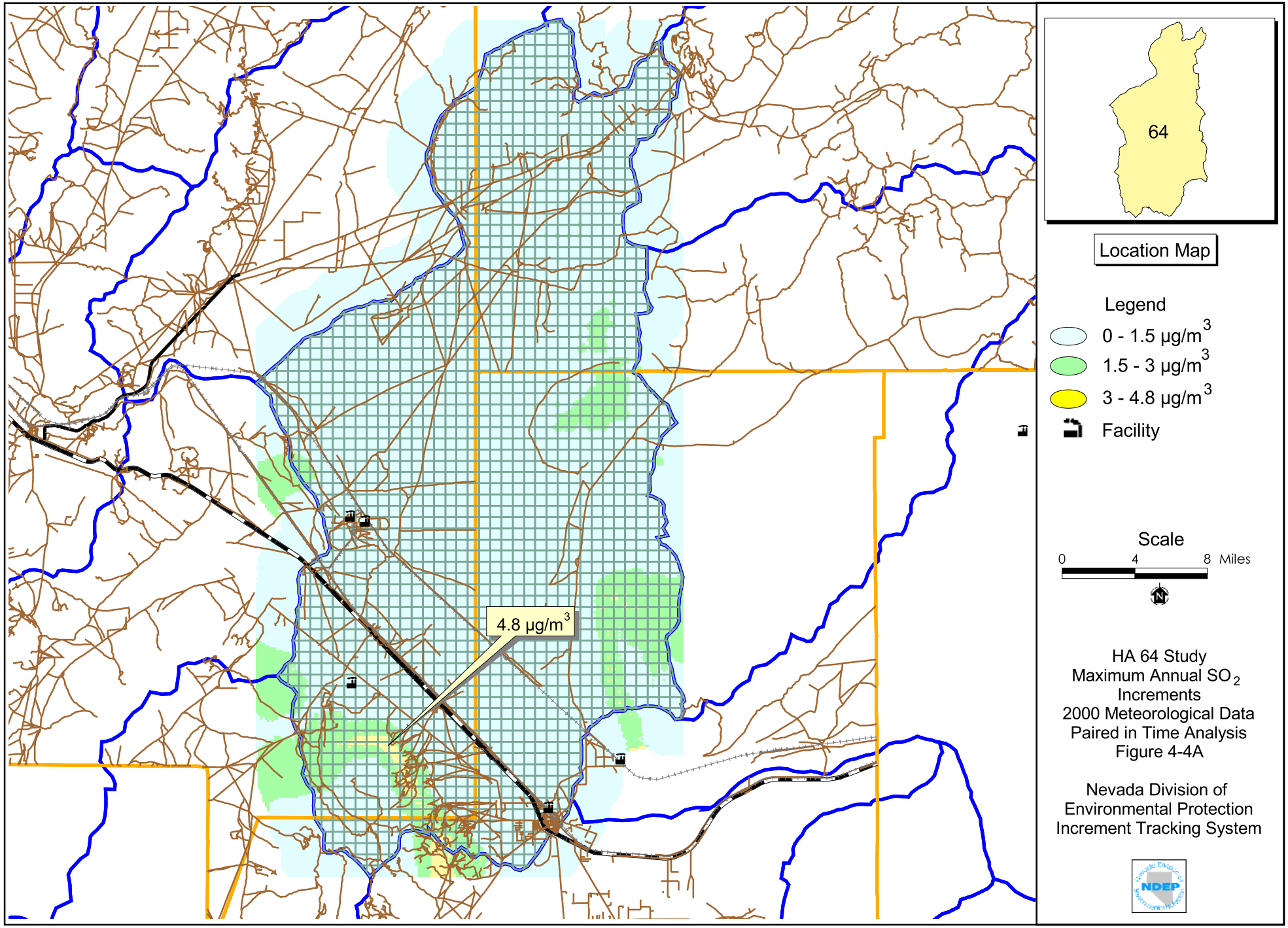
[A] Micrograms per cubic meter

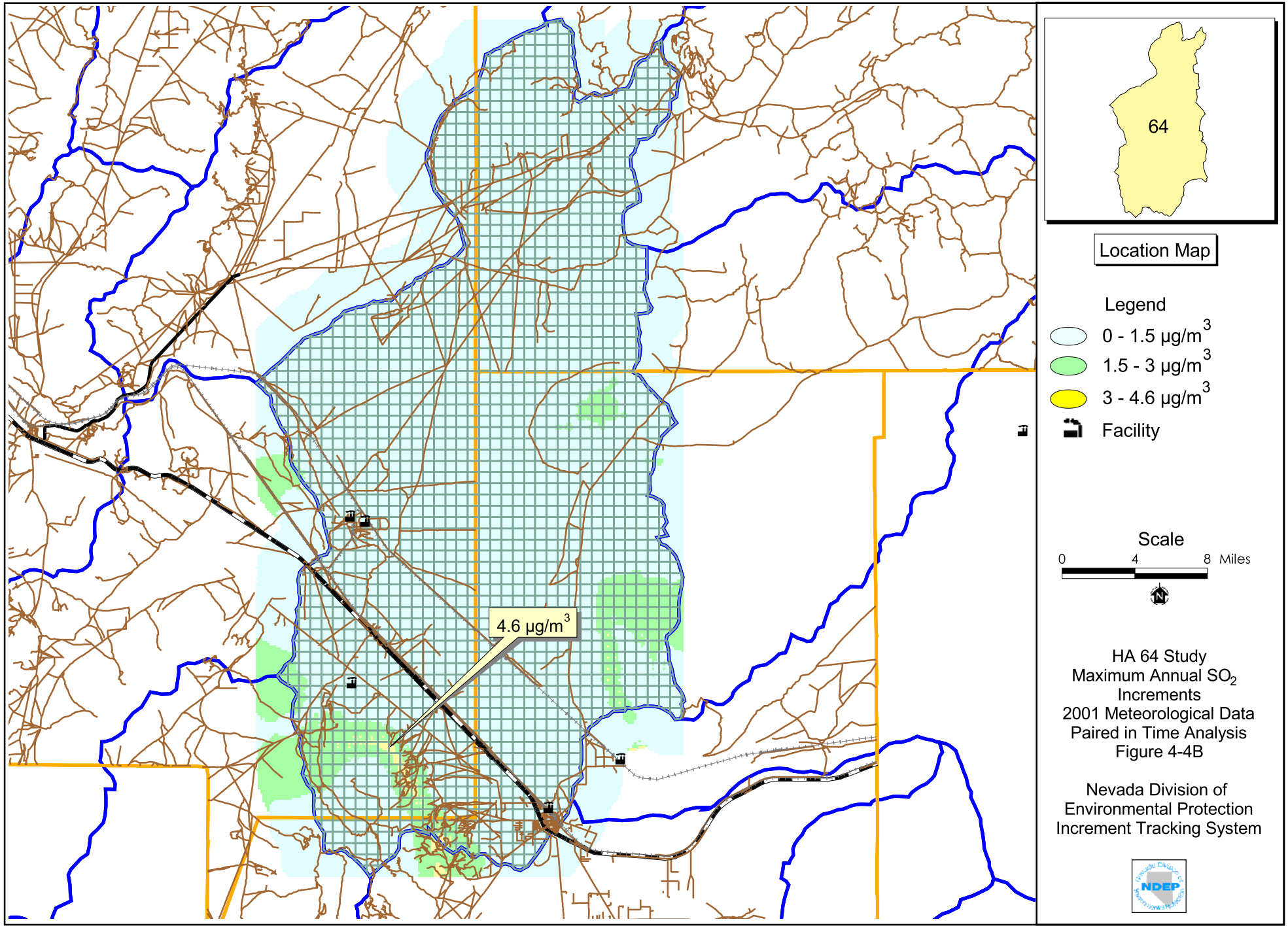

203.3 µg/m3
64
Location Map
Legend
0 - 70 µg/m3
70 - 140 µg/m3
140 - 203.3 µg/m3
Facility
Scale
0
4
8 Miles
N
HA 64 Study
High Second High
3-Hour SO2 Increments
2000 Meteorological Data
Paired in Time Analysis
Figure 4-2A
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
09/09/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 so2 3hr 2000 layout dn prr


200.7 µg/m3
64
Location Map
Legend
0 - 70 µg/m3
70 - 140 µg/m3
140 - 200.7 µg/m3
Facility
Scale
0
4
8 Miles
N
HA 64 Study
High Second High
3-Hour SO2 Increments
2001 Meteorological Data
Paired in Time Analysis
Figure 4-2B
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
04/08/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 so2 3hr 2001 layout dn prr


64
Location Map
Legend
0 - 12 µg/m3
12 - 24 µg/m3
24 - 38.5 µg/m3
Facility
38.5 µg/m3
Scale
0
4
8 Miles
N
HA 64 Study
High Second High
24-Hour SO2 Increments
2000 Meteorological Data
Paired in Time Analysis
Figure 4-3A
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
09/09/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 so2 24hr 2000 layout dn sp


64
Location Map
Legend
0 - 12 µg/m3
12 - 24 µg/m3
24 - 32.5 µg/m3
Facility
32.5 µg/m3
Scale
0
4
8 Miles
N
HA 64 Study
High Second High
24-Hour SO2 Increments
2001 Meteorological Data
Paired in Time Analysis
Figure 4-3B
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
09/09/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 so2 24hr 2001 layout dn prr


64
Location Map
Legend
0 - 1.5 µg/m3
1.5 - 3 µg/m3
3 - 4.8 µg/m3
Facility
4.8 µg/m3
Scale
0
4
8 Miles
N
HA 64 Study
Maximum Annual SO2
Increments
2000 Meteorological Data
Paired in Time Analysis
Figure 4-4A
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
09/09/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 so2 annual 2000 layout dn prr


64
Location Map
Legend
0 - 1.5 µg/m3
1.5 - 3 µg/m3
3 - 4.6 µg/m3
Facility
4.6 µg/m3
Scale
0
4
8 Miles
N
HA 64 Study
Maximum Annual SO2
Increments
2001 Meteorological Data
Paired in Time Analysis
Figure 4-4B
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
09/09/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 so2 annual 2001 layout dn prr

4.6.2 HA64 – PM_{10}

HA64 was modeled for PM_{10} impacts using the protocol described in Section 4.2 through Section 4.5. The modeling was completed using existing input data from the increment tracking database. The area source modeling was updated by Tetra Tech using an updated threshold value of 6.5E-09 g/s-m^2. PM_{10} impacts from area source emissions have little effect on maximum predicted PM_{10} concentrations. The only modeled concentrations exceeding the 24-hour PM_{10} PSD increment occur within Sierra Pacific Power's Valmy Generating Station boundary. Some of these modeled exceedences occur outside the Valmy property boundary. There were no predicted exceedences of the annual PM_{10} PSD increment. Maps representing 24-hour and annual PM_{10} increments are shown in Figures 4-5a through 4-6b. Table 4-3 shows the highest modeled PM_{10} ambient impacts in HA64. The model results given in Table 4-3 do not include impacts at receptors inside Valmy's property boundary because an emission source does not consume PSD increment within its own fenceline. Since the Valmy emission sources are the main contributor to modeled concentrations inside their fenceline, the concentrations at those receptors do not represent PSD increment consumption and were not included in Table 4-3. The Valmy Generating Station has an inner facility fenceline and an outer property boundary. Both of these boundaries are controlled with fences.

The highest, second-high modeled value outside Valmy's outer property boundary was 17.5 $\mu g/m^3$. This concentration is located approximately 17 km south of Valmy. The largest contributor to this concentration is the Glamis-Marigold Mine. For the annual modeling results, the highest modeled PM_{10} concentration was 3.8 $\mu g/m^3$, which is below the PSD increment of 17 $\mu g/m^3$. The location of this modeled concentration is approximately 30 km south-southeast of Valmy.

4.7 SUMMARY AND CONCLUSIONS

This study presented a PSD increment consumption analysis for HA 64 in central Nevada. The modeling of impacts described in this study predicted compliance with 3-hour, 24-hour, and annual SO_2 PSD increments, as well as 24-hour and annual PM_{10} PSD increments. There are no SO_2 or PM_{10} PSD increment exceedences in HA64.

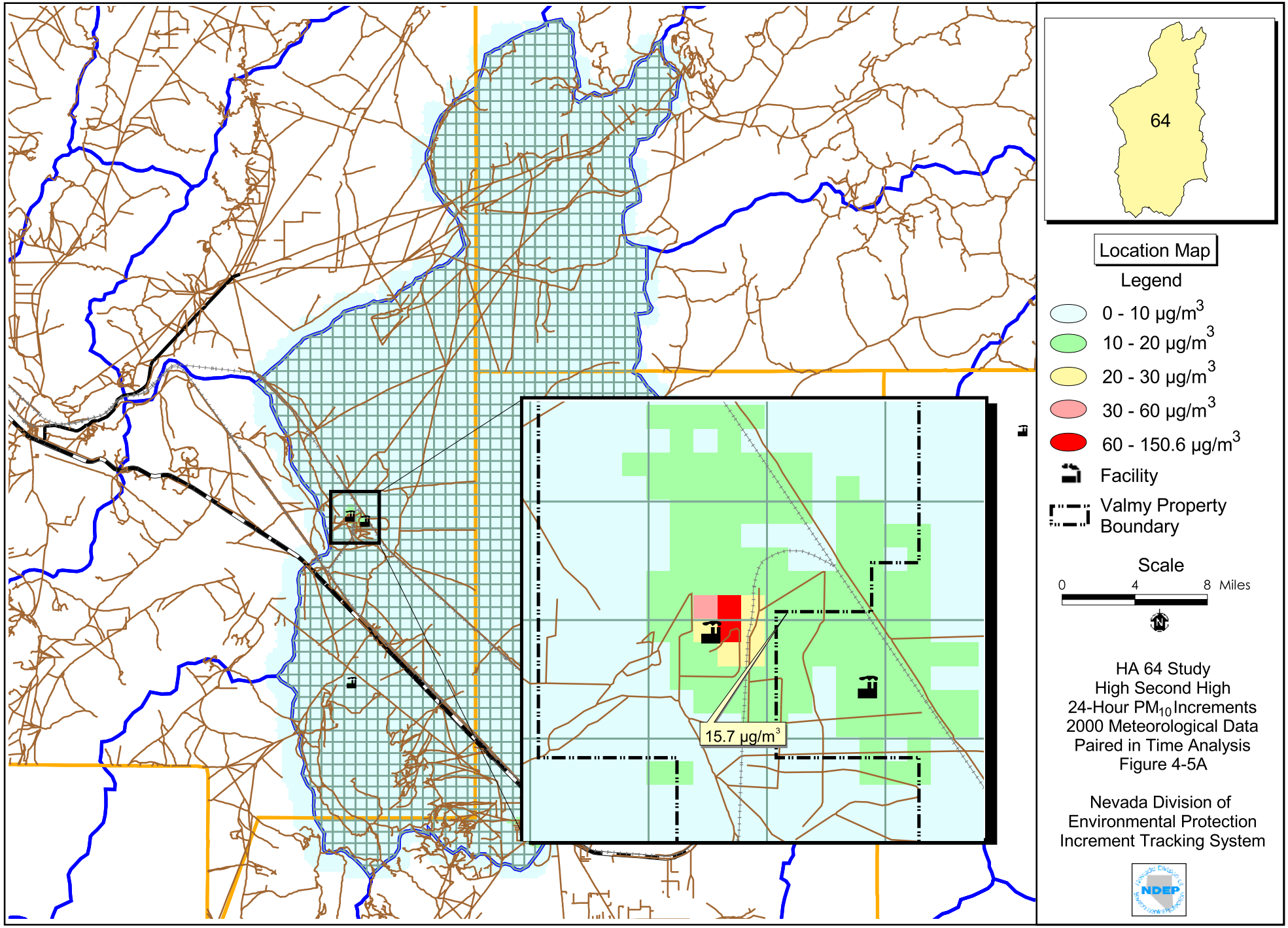
TABLE 4-3

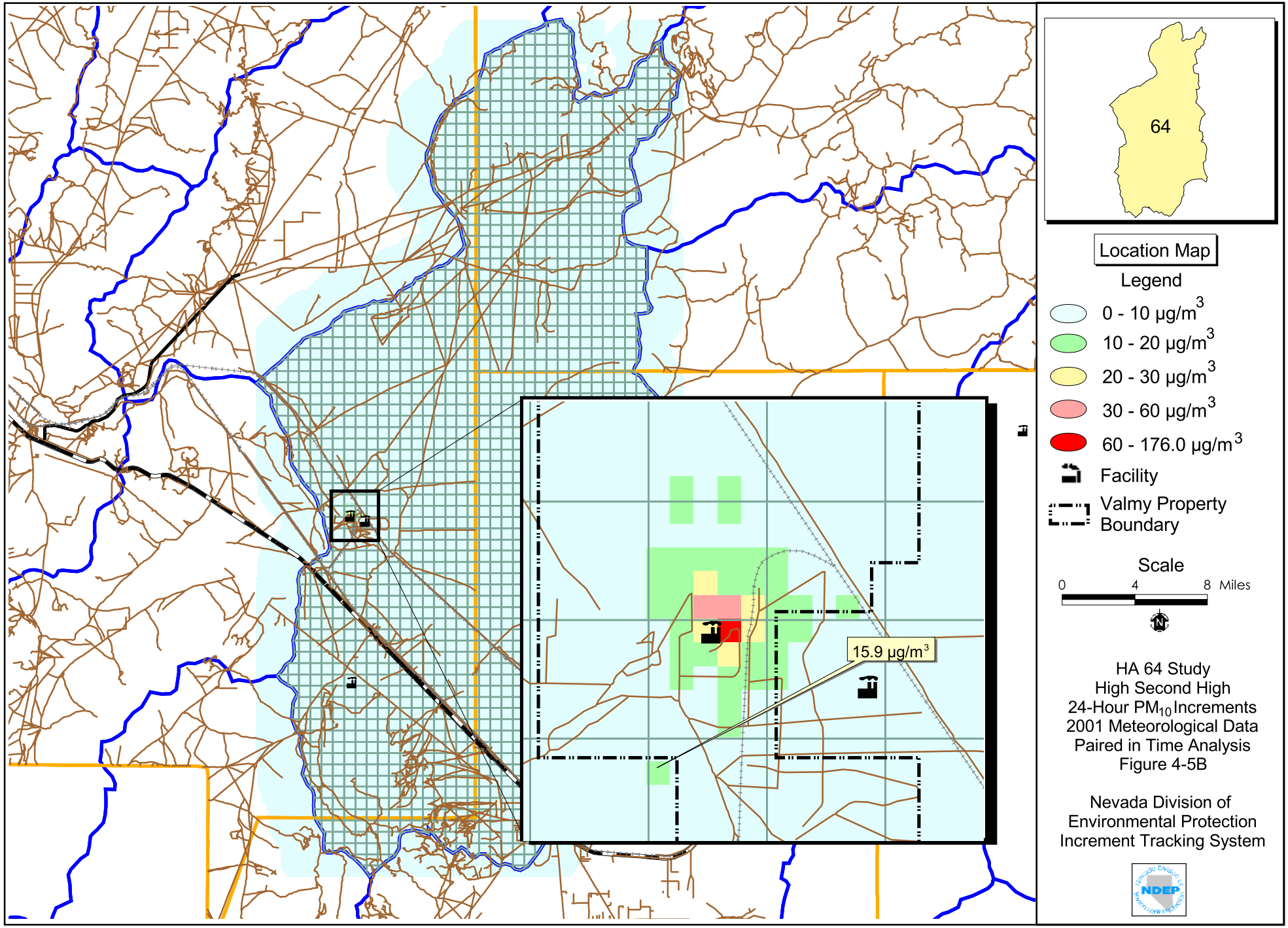
HIGHEST MODELED PM_{10} PSD INCREMENT CONSUMPTION VALUES IN HA64 FOR EACH APPLICABLE AVERAGING PERIOD

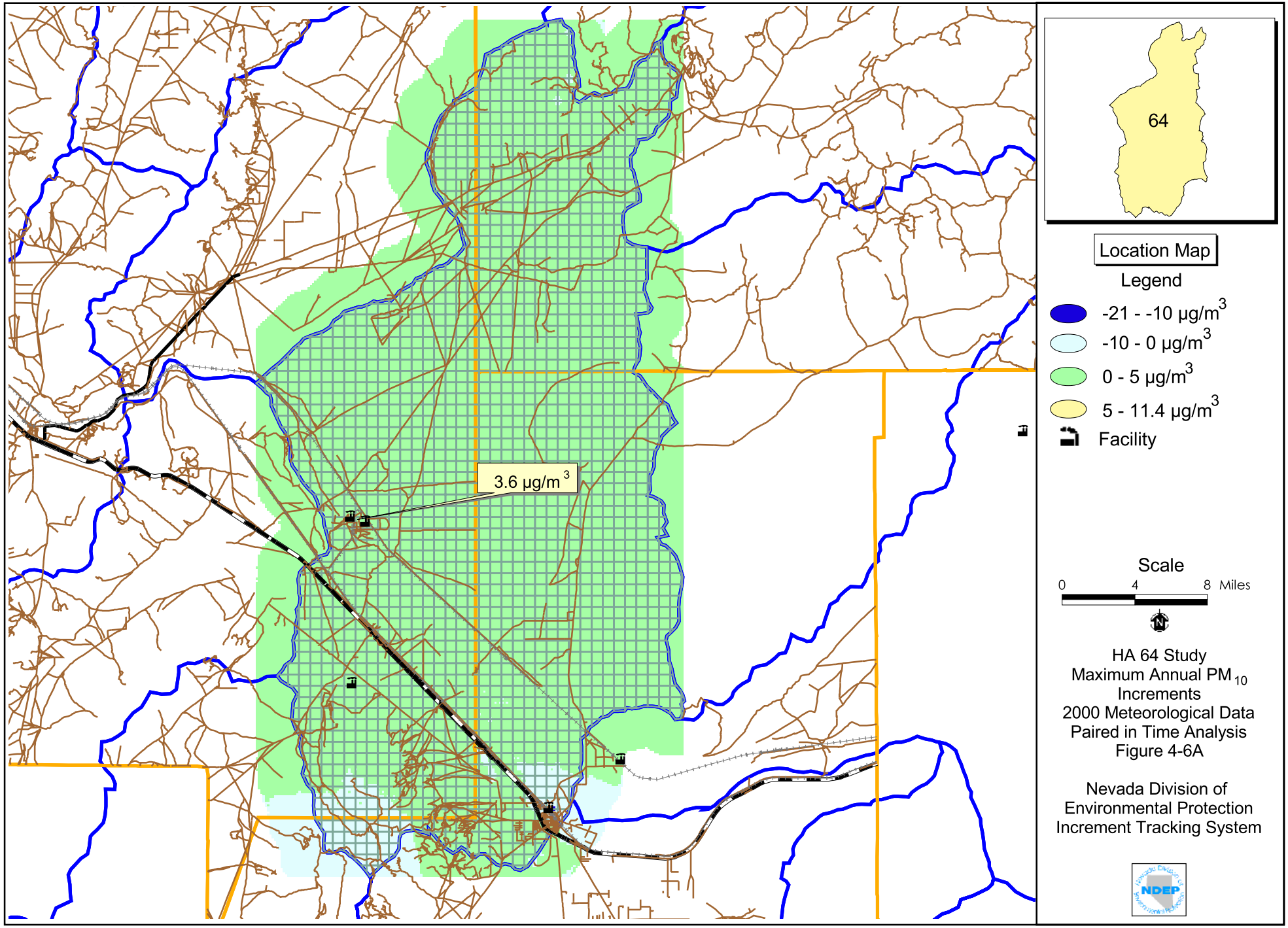
Averaging Period	X – Coordinate (UTM)	Y – Coordinate (UTM)	Total PM_{10} Increment Consumption ($\mu g/m^3$)[A]	Meteorological Year
24-Hour	487521	4525802	15.9	2001
Annual	487521	4525802	3.6	2000

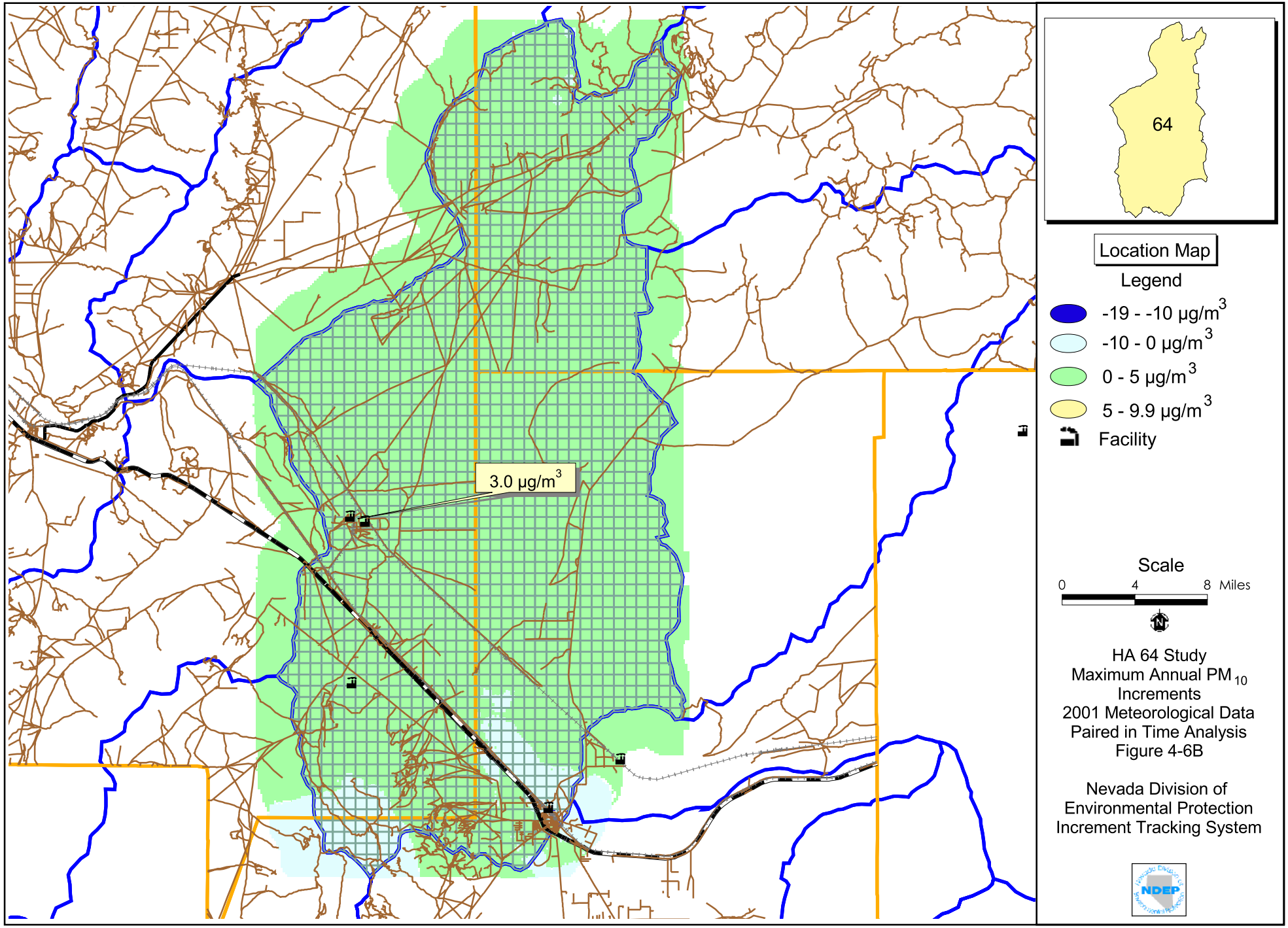
Notes:

[A] Micrograms per cubic meter


64
Location Map
Legend
0 - 10 µg/m3
10 - 20 µg/m3
20 - 30 µg/m3
30 - 60 µg/m3
60 - 150.6 µg/m3
Facility
Valmy Property Boundary
Scale
0
4
8 Miles
15.7 µg/m3
HA 64 Study
High Second High
24-Hour PM10 Increments
2000 Meteorological Data
Paired in Time Analysis
Figure 4-5A
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
11/17/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 24 hr pm10 2000 layout dn prr


64
Location Map
Legend
0 - 10 µg/m3
10 - 20 µg/m3
20 - 30 µg/m3
30 - 60 µg/m3
60 - 176.0 µg/m3
Facility
Valmy Property Boundary
Scale
0
4
8 Miles
15.9 µg/m3
HA 64 Study
High Second High
24-Hour PM10 Increments
2001 Meteorological Data
Paired in Time Analysis
Figure 4-5B
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
11/17/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 24 hr pm10 2001 layout dn prr


3.6 µg/m 3
64
Location Map
Legend
-21 - -10 µg/m3
-10 - 0 µg/m3
0 - 5 µg/m3
5 - 11.4 µg/m3
Facility
Scale
0
4
8 Miles
HA 64 Study
Maximum Annual PM 10
Increments
2000 Meteorological Data
Paired in Time Analysis
Figure 4-6A
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
11/17/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 pm10 annual 2000 layout dn prr


3.0 µg/m3
64
Location Map
Legend
-19 - -10 µg/m3
-10 - 0 µg/m3
0 - 5 µg/m3
5 - 9.9 µg/m3
Facility
Scale
0
4
8 Miles
HA 64 Study
Maximum Annual PM10
Increments
2001 Meteorological Data
Paired in Time Analysis
Figure 4-6B
Nevada Division of
Environmental Protection
Increment Tracking System
NDEP
11/17/03 O:/incrementtracking/basin_64_stoplight.apr ha 64 pm10 annual 2001 layout dn prr

5.0 REFERENCES

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U.S. Environmental Protection Agency (EPA) AIRData. Office of Air Quality Planning and Standards. Information Transfer & Program Integration Division. Research Triangle Park, NC. Online Address: http://www.epa.gov/air/data

EPA. 1990. "New Source Review Workshop Manual - Prevention of Significant Deterioration and Nonattainment Area Permitting (Draft)." Office of Air Quality Planning and Standards. Research Triangle Park, NC.

EPA. 1998. "Guideline on Air Quality Models (Revised)." 40 Code of Federal Regulations, Part 51, Appendix W. Office of Air Quality Planning and Standards. Research Triangle Park, NC.

Nevada Division of Environmental Protection (NDEP). 2002. Bureau of Air Quality record search, Carson City, Nevada.

APPENDIX A

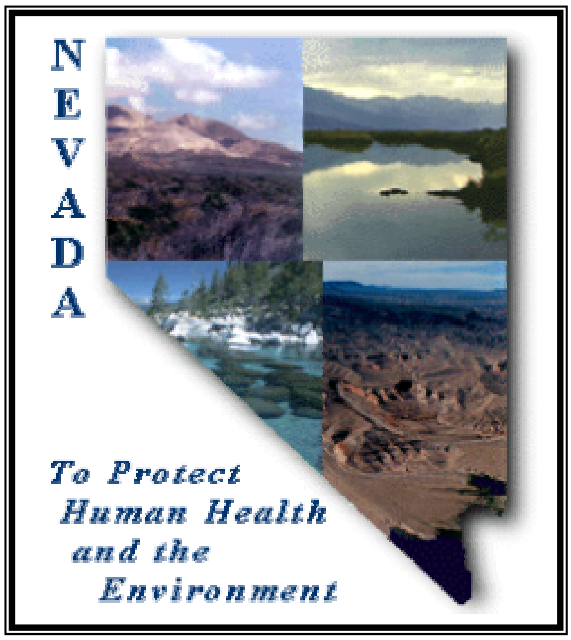
MODELING FILES

APPENDIX B

INCREMENT TRACKING SYSTEM

APPENDIX C

INCREMENT TRACKING SYSTEM QUICK GUIDE



Increment Tracking System Quick Guide

Assessing PSD Increment in the Fernley Area and Truckee River Corridor

Prepared for

State of Nevada
Division of Environmental Protection

Prepared by

Tetra Tech EM Inc.
1099 – 18th Street, Suite 1900
Denver, Colorado 80202

CONTENTS

CONTENTS (Continued)

FIGURES

Figure

ATTACHMENTS

Attachment

1.0 INCREMENT TRACKING SYSTEM

The Increment Tracking System (ITS) is a database and geographic information system (GIS) desktop application that permits access to major and minor source baseline information, annual emissions data, and permitted emissions data. The ITS combines the relational database capabilities of Microsoft Access 2000 (Access) with the spatial analysis capability of ArcView to provide the Bureau of Air Pollution Control (BAPC) and Bureau of Air Quality Planning (BAQP) a desktop application that will improve the current method of storing, maintaining, retrieving, and presenting emissions data. Additionally, the ITS generates AERMOD model input data for use in modeling, using user defined parameters, and imports, stores, and presents AERMOD output files to provide BAPC and BAQP a method of archiving and reviewing results from model runs. The ITS provides users with a user-friendly graphical user interface (GUI) for entering data, querying data, generating model input data, and reporting capabilities. ITS users can view and query data using the GIS interface or the database interface.

1.1 SYSTEM DESCRIPTION

The ITS is composed of two major components, a relational database component and a GIS component. The relational database component is an Access database. The GIS component is ArcView. Whenever possible, the components share rather than independently store data. For example, facility information, such as location and ownership, presented on maps in the ArcView component of the ITS, uses tables and data stored in the Access database. At the time the ArcView application is started, it connects to the Access component using open database connectivity (ODBC). The ArcView component queries an Access table for locations, reads those locations, and presents facilities on the GIS map based on the coordinates and information in the Access table. Using an ODBC connection minimizes the chances of update errors occurring. Update errors can occur when data are stored in more than one location and updates are not made consistently to both databases. Storing data in one location prevents this type of data inconsistency.

The ITS was designed so that a user could use only the Access component, only the ArcView component, or both components simultaneously. Because the ArcView component of the ITS uses Access data, it is imperative that the Access component be available to the ArcView component. If for any reason the Access component is removed from its pre-defined location on the system, the ArcView component will not operate as desired. However, the Access component need not be opened or executed for the ArcView component to obtain data from it. Conversely, the Access component can operate independently of the ArcView component if the user does not require a map-based interface.

1.2 SOFTWARE SELECTION

1.2.1 Microsoft Access

Access is the relational database component of the ITS. This desktop database application software was selected because of its ability to accommodate several concurrent users, the ability of ArcView to access its data tables, and because it is a 'standard' in desktop relational database management systems (RDBMS). Additionally, Access can be customized to tailor an application to specific user needs, and it can accommodate the type and volume of data used in tracking increment consumption.

The customization of Access for the ITS included the creation of data selection screens tailored to increment consumption and emissions data, data viewers that organize data for review, and report generators. These reports are created in Access report format and American Standard Code for Information Interchange (ASCII) files for use in AERMOD. ITS users that are familiar with Access and relational databases can open data in tabular form to view emissions data and data table relationships, and to execute their own data queries.

1.2.2 ArcView

ArcView is the GIS component of the ITS. This desktop GIS software was selected because it is the industry leader in desktop GIS software and provides powerful data visualization, query, and analysis functions. Additionally, ArcView can combine with Microsoft Access to allow users the ability to create and edit geographic data. The customization of ArcView for the ITS included the creation of buttons to consolidate frequently occurring command sequences into one button click or menu selection, and GUIs to guide users to emissions data and hydrographic areas (also known as basins) and streamline data accessibility. Additional enhancements to ArcView allow it to execute the Access component of the ITS and to use data stored in it. The spatial data model used by ArcView is a standard geographic data model and is common to the spatial data used by NDEP and BAPC and BAQP.

1.3 DATABASE ADMINISTRATION AND IMPLEMENTATION PROCEDURES

1.3.1 Database Requirements

Installation of the ITS will require that BAPC and BAQP install the application in the correct location on their system. It is essential for the GIS application functionality that all files remain in the correct directory. Removing files from this directory will cause the application to fail.

1.3.1.1 Software Requirements

Microsoft Access 2000 is the required version of Access. Earlier versions of Access will not support the ITS. The GIS software required by the ITS is ArcView 3.2. ArcView 3.2 applications will not convert to the recently released ArcView 8.x. Migrating the GIS component of the ITS to ArcView 8.1 will require significant modifications to the application.

1.3.1.2 Hardware Requirements

A system capable of running Microsoft Access and ArcView will be required to operate the ITS. The following system requirements are minimum requirements. Additional processing speeds, random access memory (RAM), and disk space will enhance application performance.
Minimum hardware requirements for the ITS:

- Personal Computer (PC) with a Pentium 300 megahertz (MHz) or higher processor
- Microsoft Windows® 95 or newer operating system, or Microsoft Windows NT® Workstation operating system version 4.0 Service Pack 3 or newer
- 64 megabytes (MB) of RAM
- Approximately 400 MB of available hard-disk space for Microsoft Access and ArcView and approximately 75 MB for the ITS and supporting data (disk space requirements can be on a network drive, local drive, or a combination of network and local drives.)
- CD-ROM drive
- VGA or higher-resolution monitor; Super VGA recommended
- Microsoft Mouse, Microsoft IntelliMouse®, or compatible pointing device

1.3.1.3 User Expectations

To operate the ITS effectively, users should have a working knowledge of Access and ArcView. The application does contain specific GUIs designed to aid in the retrieval and presentation of data. It is likely that inexperienced users using these GUIs will be able to use the application successfully. However, skills in both Access and ArcView will allow users to draw on the additional functionality of both softwares.

1.3.2 Data Acquisition and Data Formatting

1.3.2.1 Paradox Data

Emissions and permitting data for the 'current' year (1998 or 1999) were received from BAPC and BAQP in a Paradox database. Emissions and permitting data were imported into the Access 2000 database and were mapped to the ITS data table structure. The Access component of the ITS uses BAPC and BAQP's Paradox database structure as its foundation. Facility, system, and emissions data are stored in tables similar in design and content to the table structure found in the Paradox database. Only slight modifications were made to the Paradox structure. For example, emission unit data was incorporated into the control and System information. All FacSeq, FacilityID, System#, and Control# keys from Paradox were retained in order to maintain data relationships with the original data.

An entity relationship diagram presenting the ITS database structure is shown in Figure 1.

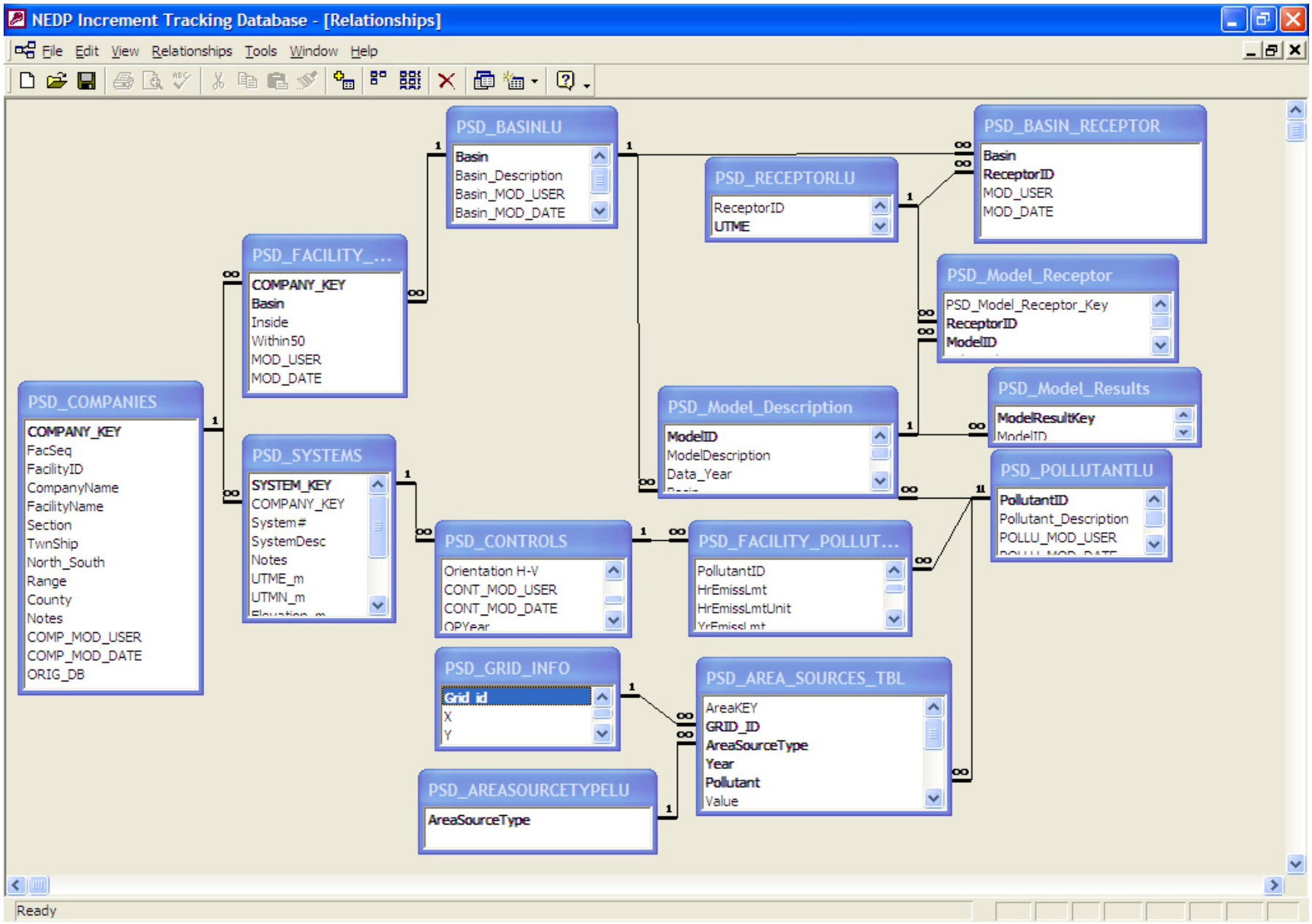
1.3.2.2 National Emissions Trends Data

No area source data was included in the BAPC and BAQP paradox database. National Emissions Trends (NET) data were acquired and apportioned to areas using methods described in the emissions inventory section of this document. Apportioned NET data are stored in the PSD_Area_Sources_Table table in the Access 2000 database.

1.3.2.3 Researched Data

Stationary and area source baseline data are also include in the ITS. These data are stored the same tables as 'current' data and are identified by year and pollutant.

FIGURE 1
ACCESS DATABASE ENTITY RELATIONSHIP DIAGRAM



1.3.2.4 Spatial Data

The spatial data presented in the ArcView component of the ITS is in the shapefile format. Spatial data were obtained from BAPC and BAQP and from other government agencies, including the U.S. Census Bureau and the U.S. Geological Survey (USGS). The spatial data presented in the ArcView component of the ITS is referenced to the Universal Transverse Mercator (UTM) projection, Zone 11. The project datum is North American Datum of 1983 (NAD83) and the horizontal units are meters. Data were obtained in this projection or converted to UTM zone 11, NAD83 using established GIS techniques.

The facility location theme (Facilities) is created dynamically from data in the Access component of the ITS. ArcView connects to the Access table, PSD_Companies_GIS, using ODBC and uses the UTM coordinate data for each facility to place the facilities on the ArcView maps.

1-kilometer (km) area source grid themes were created using GIS techniques to cover each of the three hydrographic areas. The area source grids are a static dataset. The attributes or characteristics of the area grids are stored in the Access table PSD_area_source_GIS_Table. When the application starts, area source data from the Access component of the ITS is liked to the 1km by 1km spatial data set for presentation. Receptor point locations were also created using GIS techniques at a 500-meter spacing.

See Attachment A for GIS metadata of the themes included in the ArcView component of the ITS.

1.3.3 Data Entry and Quality Control Procedures

1.3.3.1 Paradox Data

Current data from the state of Nevada was received in the form of a Paradox database. Relevant data was imported into the Access2000 database and brought into the PSD study's database structure. The original tables imported from paradox were kept in the database during development for easy checking and to ensure all the data was properly imported into the new tracking system structure. All FacSeq, FacilityID, System# and Control# keys from paradox were retained so that linking back to the Paradox database could be performed if necessary. Keeping this key information would also ease importing any data or fields that were in the original Paradox database that were not needed for the tracking system. For instance, contact information and fee payment information were in the original database but were not needed for the tracking system. The database was designed in such a way that this data could be easily added to the tracking system later on if necessary.

1.3.3.2 Spatial Data

As previously mentioned, facility location data was derived from the BAPC and BAQP's paradox database and was imported into the Access component of the ITS. The ArcView component of the ITS dynamically references this table and locates the facilities based on their UTM coordinates. As part of the database quality control process, the facilities were plotted on USGS topographic quad sheets and reviewed to insure that they were properly positioned.

Spatial data that was collected from government sources was not checked for accuracy as these data are subject to review procedures by their government source.

Area grids and receptor locations created using GIS techniques were presented on maps and were reviewed by air dispersion modelers to confirm their locational accuracy, as well as their impact on model runs.

1.4 APPLICATION DATA RETRIEVAL AND USE

1.4.1 Queries

The ITS application contains queries that create tables used by both the Access and ArcView components of the system. AERMOD input files and user reports can then be created from subsequent queries. Many queries created for the application are not seen by the user. However, they can be added to the selection screen or accessed through the back end if they appear useful. See Attachment B for a list of these queries.

1.4.2 Reports

Several types of reports can be created from the data in the Access database. These reports are summarized below.

Facility Information Reports: Facility information reports can be accessed through the reports form of the application by selecting the appropriate radio buttons. To create a report for one facility select **View Summary Report for a Selected Facility** (Figure 2) and then select a facility from the pick list on the right and click **Preview Report** at the bottom of the form. The report that is returned shows the details of the facility's systems and controls, including emission data (Figure 3). Company, system, and control information are organized hierarchically in the report. To create a similar report for all of the facilities in the database, select the radio button **Summary Report for all Companies** and click **Preview Report** at the bottom of the form (Figure 4).

FIGURE 2
CREATE FACILITY INFORMATION REPORTS

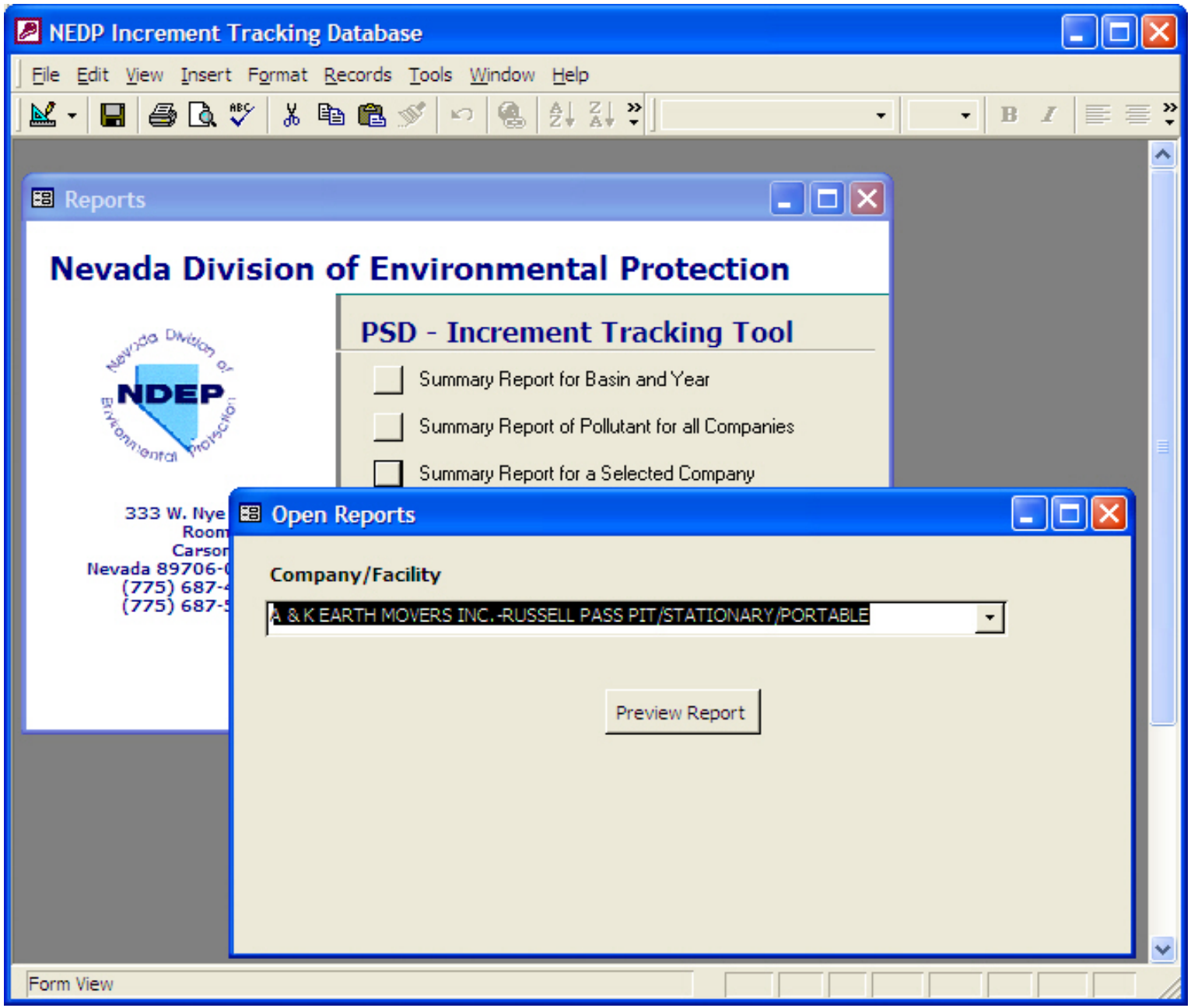


FIGURE 3
FACILITY INFORMATION REPORT

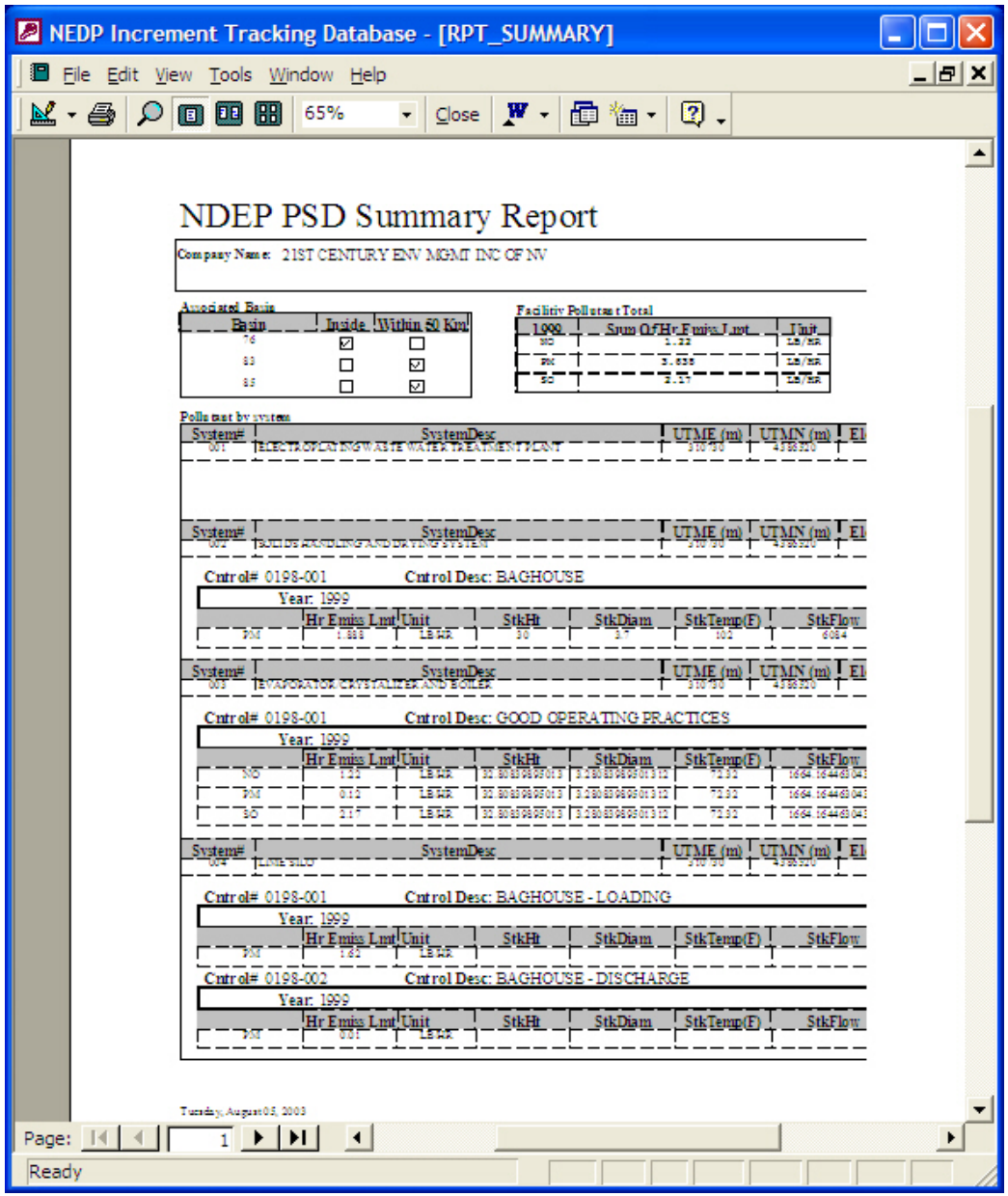
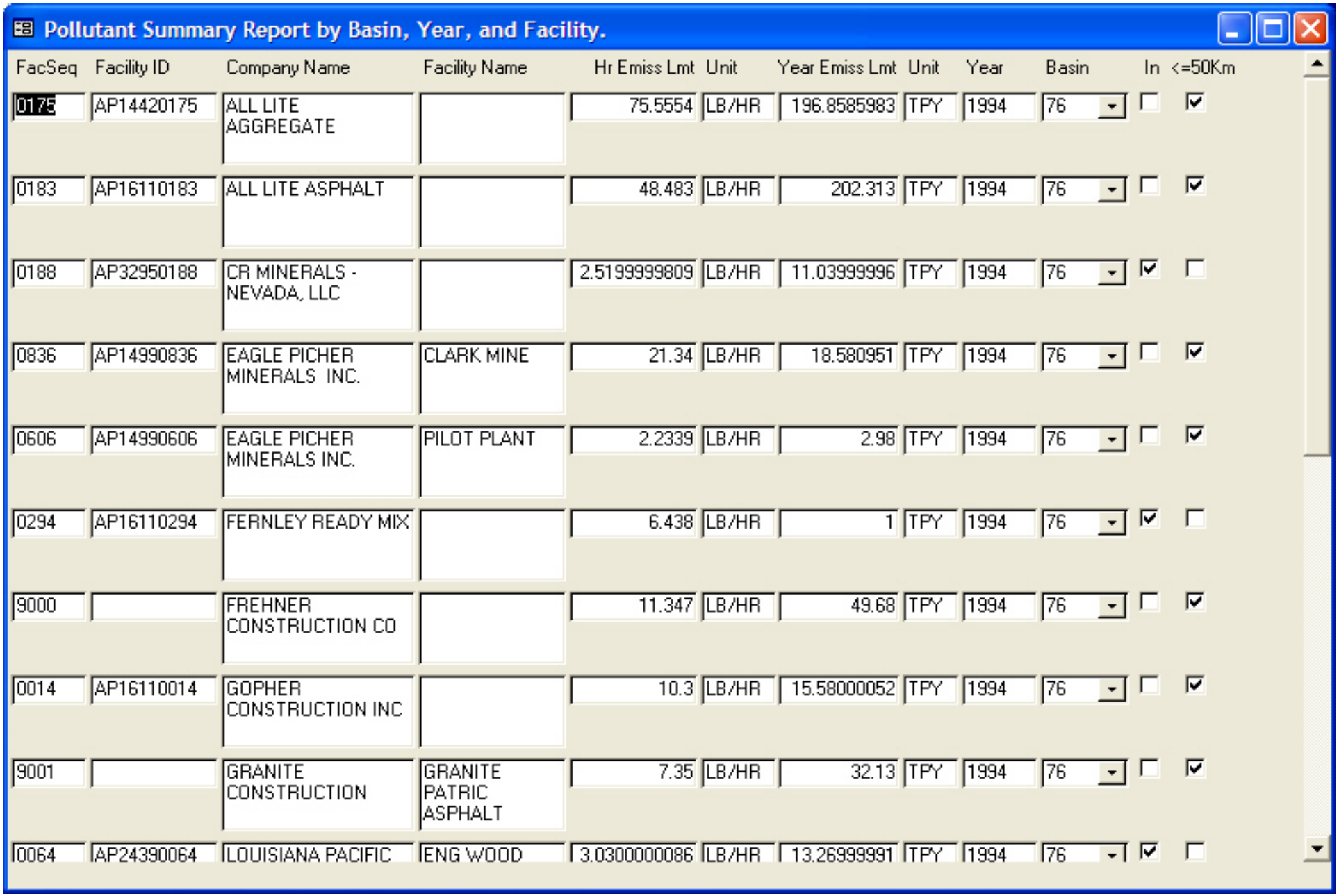


FIGURE 4
SUMMARY REPORT



Pollutant Summary Report by Basin, Year, and Facility.

FacSeq	Facility ID	Company Name	Facility Name	Hr Emiss Lmt	Unit	Year Emiss Lmt	Unit	Year	Basin	In	<=50Km
0175	AP14420175	ALL LITE AGGREGATE		75.5554	LB/HR	196.8585983	TPY	1994	76	☐	☑
0183	AP16110183	ALL LITE ASPHALT		48.483	LB/HR	202.313	TPY	1994	76	☐	☑
0188	AP32950188	CR MINERALS - NEVADA, LLC		2.5199999809	LB/HR	11.03999996	TPY	1994	76	☑	☐
0836	AP14990836	EAGLE PICHER MINERALS INC.	CLARK MINE	21.34	LB/HR	18.580951	TPY	1994	76	☐	☑
0606	AP14990606	EAGLE PICHER MINERALS INC.	PILOT PLANT	2.2339	LB/HR	2.98	TPY	1994	76	☐	☑
0294	AP16110294	FERNLEY READY MIX		6.438	LB/HR	1	TPY	1994	76	☑	☐
9000		FREHNER CONSTRUCTION CO		11.347	LB/HR	49.68	TPY	1994	76	☐	☑
0014	AP16110014	GOPHER CONSTRUCTION INC		10.3	LB/HR	15.58000052	TPY	1994	76	☐	☑
9001		GRANITE CONSTRUCTION	GRANITE PATRIC ASPHALT	7.35	LB/HR	32.13	TPY	1994	76	☐	☑
0064	AP24390064	LOUISIANA PACIFIC	ENG WOOD	3.0300000086	LB/HR	13.26999991	TPY	1994	76	☑	☐

1.4.3 Tables

The tables that reside in the ITS database were either created by importing data from the BAPC and BAQP's original Paradox database, or were created from researched data. Additionally, some tables were created to provide derived or intermediate information from the original data. The tables in the ITS remain mostly "hidden" from the user by the forms set up to provide a user-friendly GUI. However, users familiar with Access can easily view data in the tabular form if preferred. The tables included in the database are summarized in Attachment C.

1.4.4 Creating AERMOD Input Files

A file for source input into AERMOD can be generated from the database application. From the main selection screen choose **AERMOD and Receptors,** then choose **Generate AERMOD Input (**Figure 5). Next, choose a basin, year, and pollutant to model. Press the **Open** button and a new window will open that has fields containing information that will be used as comments in your input file, as well as to name the AERMOD input file. Fill in or change the existing information in these fields as preferred. Press the **Next** button at the bottom of the screen to continue creating the output file. The model input file will automatically include all major and minor sources within the selected basin and any major sources (greater than 250 tpy) within 50-km of the basin. At this point the model input file can be viewed in Notepad by choosing **View** from the bottom of the form.

1.4.5 Modifying Receptor Sets

The user can modify receptor sets by selecting the radio button **Add and Edit Receptor**. A table with a listing of all receptors in the chosen basin will open (Figure 6). The user can add, edit, or remove receptors used for the model here. The receptors used for a particular model run are retained in the database. This allows for a model input file to be generated at any time as well being able to view any model's results graphically in ArcView or in a table format in the Access application.

1.4.6 Importing Model Results

To import model-run results, select the radio button **Import Model Results** from the model results form. Users must enter a correct file path and name in the field "File Path and File Name". Then users need to select a correct Model. If the Model is not in the database, users can click the button **Edit Model** to add a new model and its receptors. Users must select a term, such as 3-Hour, 24-Hour, or annual for the model results they need to import. Then, users can click the button **Step One** and review the model results in a text editor. If the text file looks correct, users can click the button **Step Two** to import the results into the database.

FIGURE 5
CREATE AERMOD INPUT FILES

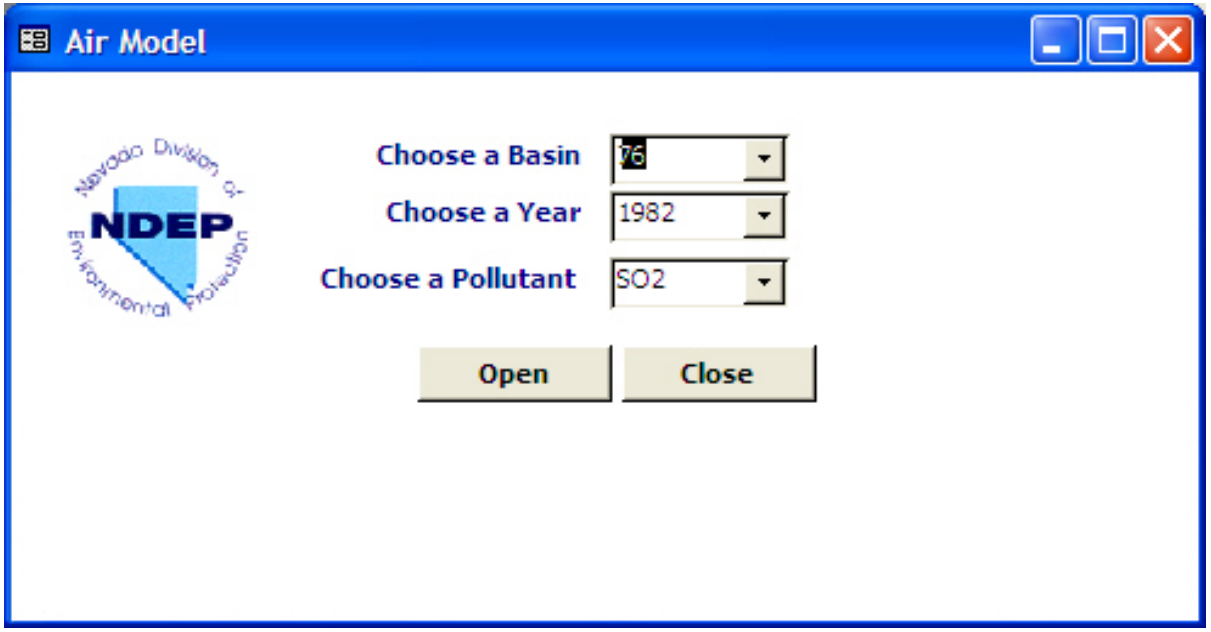
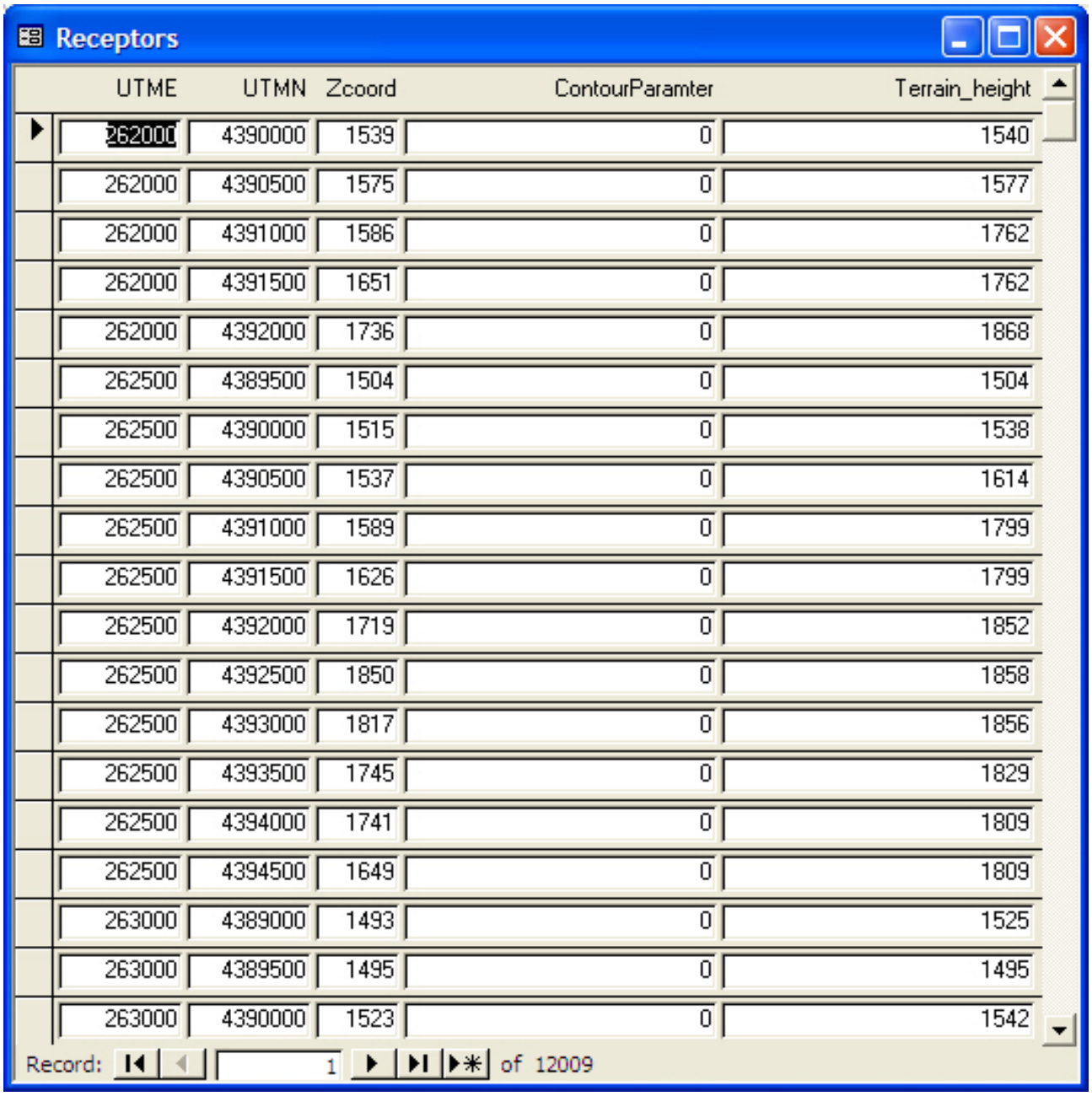


FIGURE 6
MODIFY RECEPTOR SETS



1.4.7 Adding and Editing Facility Data

To add a facility to the Access component of the ITS, choose the radio button option **Add and Edit a Facility**. A data entry form will open that shows data for the first facility recorded in the database. On the bottom of the screen, scroll through the facility records until a blank form appears where facility information can be added (Figure 7). This form will be located as the last record. Facilities, systems and controls can be added using this blank form. If a facility already exists in the system, the user can edit its data by scrolling through the facility records until the desired facility appears on the screen (Figure 8).

1.5 GEOGRAPHIC INFORMATION SYSTEM

1.5.1 Spatial Database Design

The ArcView component of the ITS is organized into maps or views, one for each of the study hydrographic areas. Each of these views can be accessed when starting the ArcView component of the ITS. An example of a basin selection screen is presented in Figure 9. A custom button has been added to ArcView to allow the user to easily switch between basins. Alternatively, the user may select basins by using standard ArcView window navigation techniques.

Each hydrographic basin view includes the base map themes for the area, the area 1-km grid cells and receptor points, and the Facilities theme. These themes may be turned on or off using standard ArcView functions.

All GIS base map data is stored in one directory called *'incrementtracking/GIS'*. The data is stored in ArcView shapefile format. The Facilities and Receptors themes are created dynamically from the PSD_Companies and PSD_ReceptorLU tables in the Access component of the ITS. These themes and attribute data for the areas sources is refreshed each time the ITS is started, after the user returns from opening or making changes in Access, and manually by the user by pushing the **Refresh Access Data** button.

1.5.2 Spatial Data Acquisition and Formatting

The spatial data for the ITS was acquired from several sources, including the State of Nevada, the USGS, and the Census Bureau. All spatial data was converted to ArcView shapefile format and metadata was created for each theme (see Attachment A).

FIGURE 7
ADD A NEW FACILITY

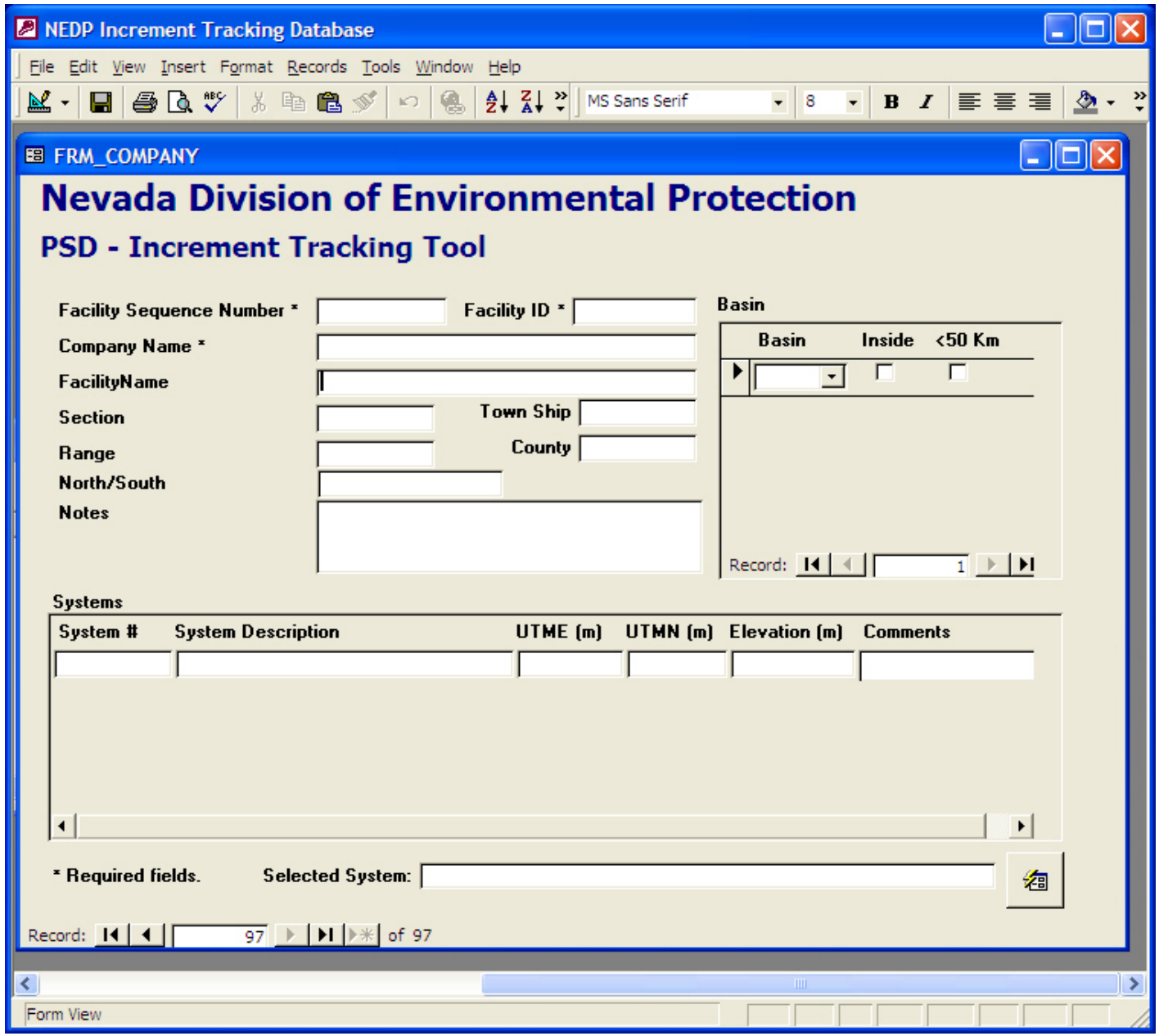


FIGURE 8
EDIT AN EXISTING FACILITY

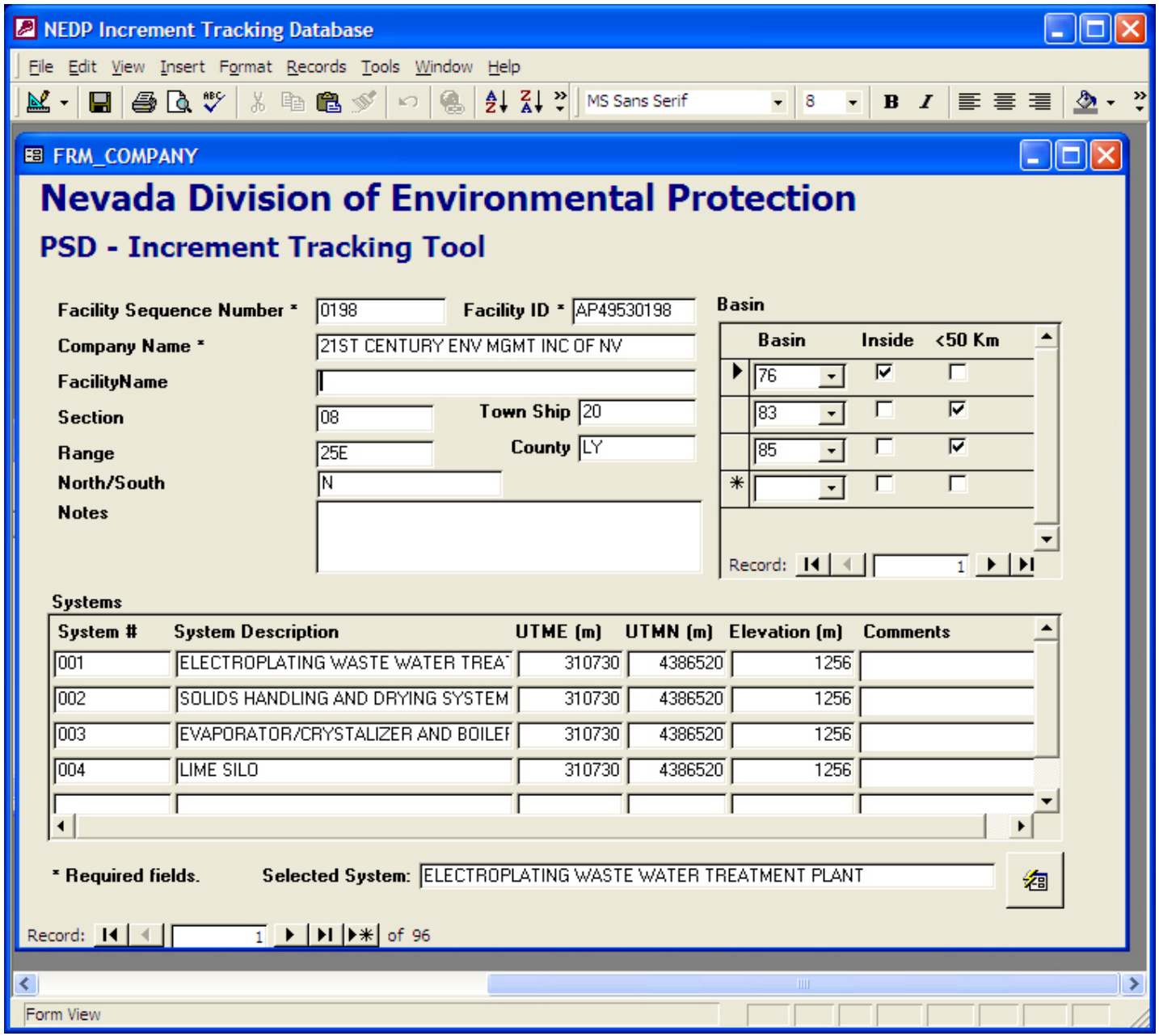
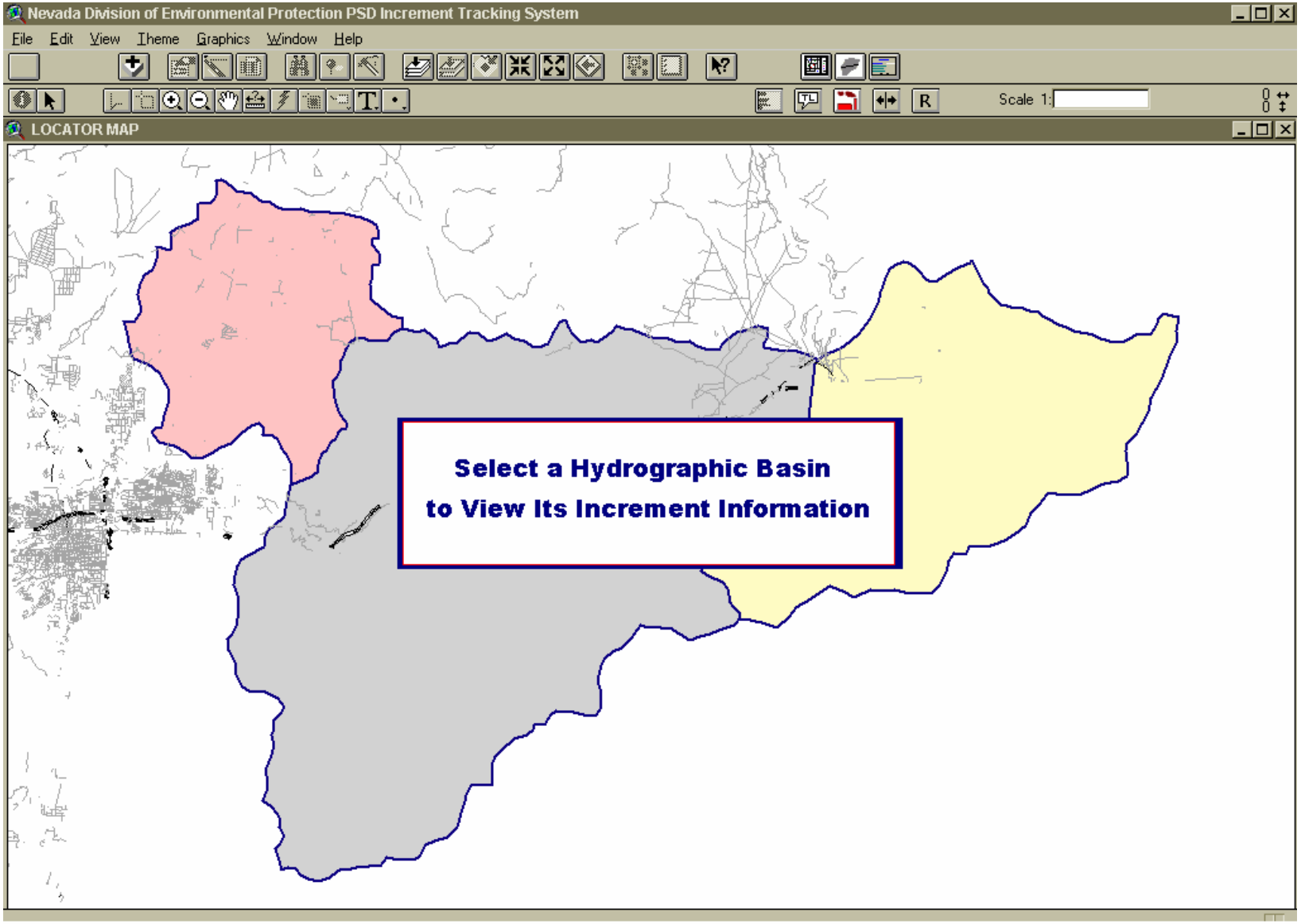


FIGURE 9
BASIN SELECTION SCREEN



1.6 ARCVIEW GIS DATA RETRIEVAL AND USE

1.6.1 Presenting Data Graphically

The spatial data for each hydrographic area is organized and symbolized for the user in a default presentation. The user may use standard ArcView techniques to modify this presentation or to create additional graphic displays of the data. Shaded classification maps of emissions data for each 1-km area grid can be created automatically by selecting the **Map Area Results** button (Figure 10). When the user clicks this button they are is prompted to choose total, vehicular, railroad, or miscellaneous area source emissions to the map. When the map is created, the user can modify the symbology using standard ArcView legend editor capabilities.

All data presented on a map can be included in a map composition or layout. To create a custom layout, click the **Create Custom Map Layouts** button and a new layout based on the features visible in the map view will be created. In addition to the spatial data, the map will include a user defined title, automatically accurate scalebar, north arrow, and NDEP logo.

1.6.2 Presenting Attribute Data in Reports or Facility Attribute Boxes

To create a text report of attribute data for any feature, click on the **Create Report of Attributes** tool and then click the feature in an active theme that you want a report for. A text report will be created and Windows Write will open it (Figure 11). This report can be printed, or saved to a new file.

Selecting the **Create Facility Information Boxes** tool creates facility attribute boxes for display on a map. Instructions for using this tool will appear in a message box after you select the tool. After you have drawn a leader line from the feature for which you want to create a box, you will be prompted to choose fields to include in the information box. Data for all facility systems and controls found at this location will be presented in a table connected to the feature by a leader line (Figure 12).

1.6.3 Viewing Model Results

Model results stored in Access can be mapped in the ArcView component of the ITS. Click on the button **Map Model Results** (Figure 13) and choose a set of previously entered model results. A new ArcView theme with each receptor used in the model will then be added to the view. Select **Yes** to create contours, or **No** to end.

FIGURE 10
MAP AREA RESULTS

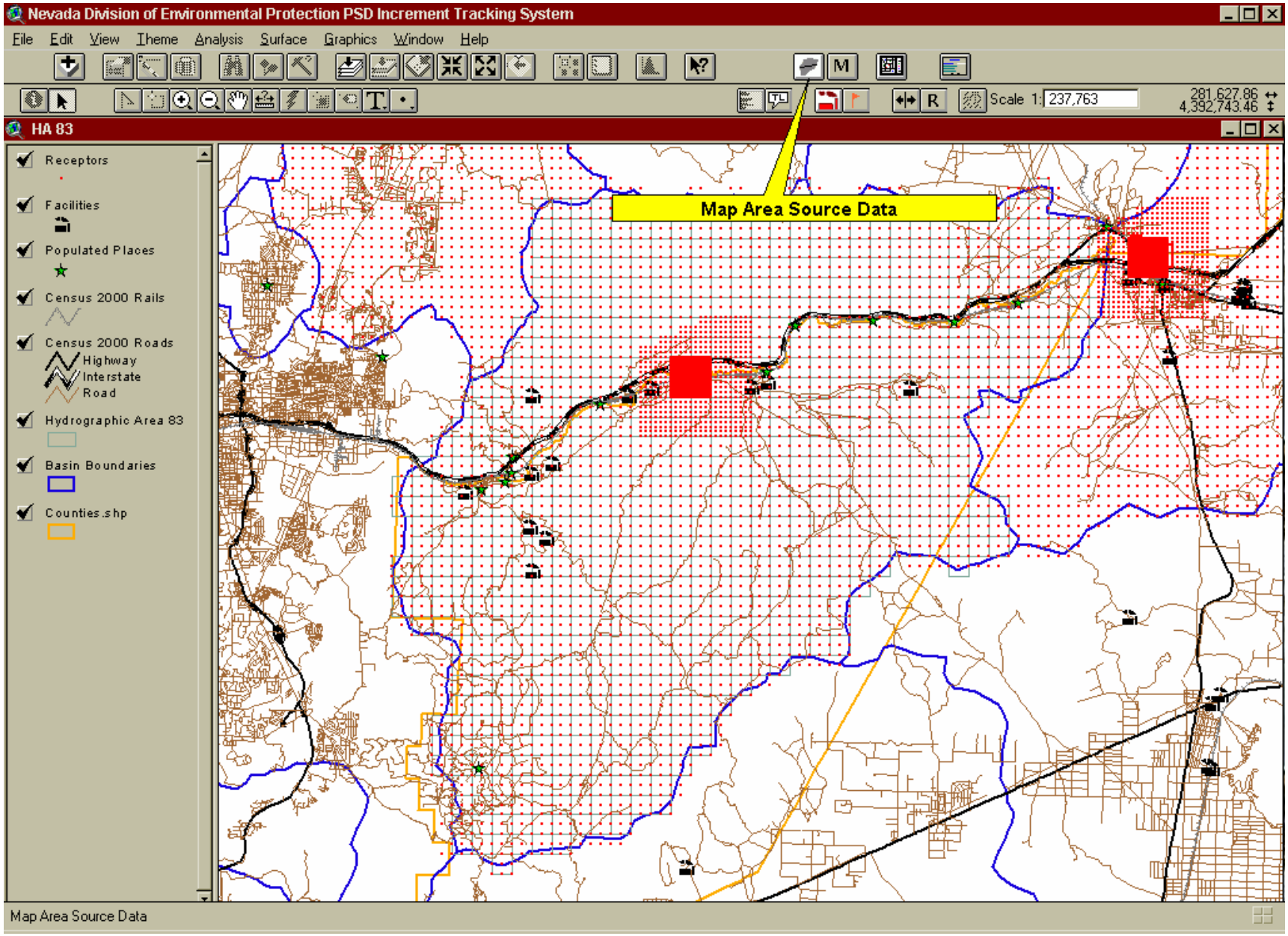


FIGURE 11
CREATE A REPORT OF FEATURE ATTRIBUTES

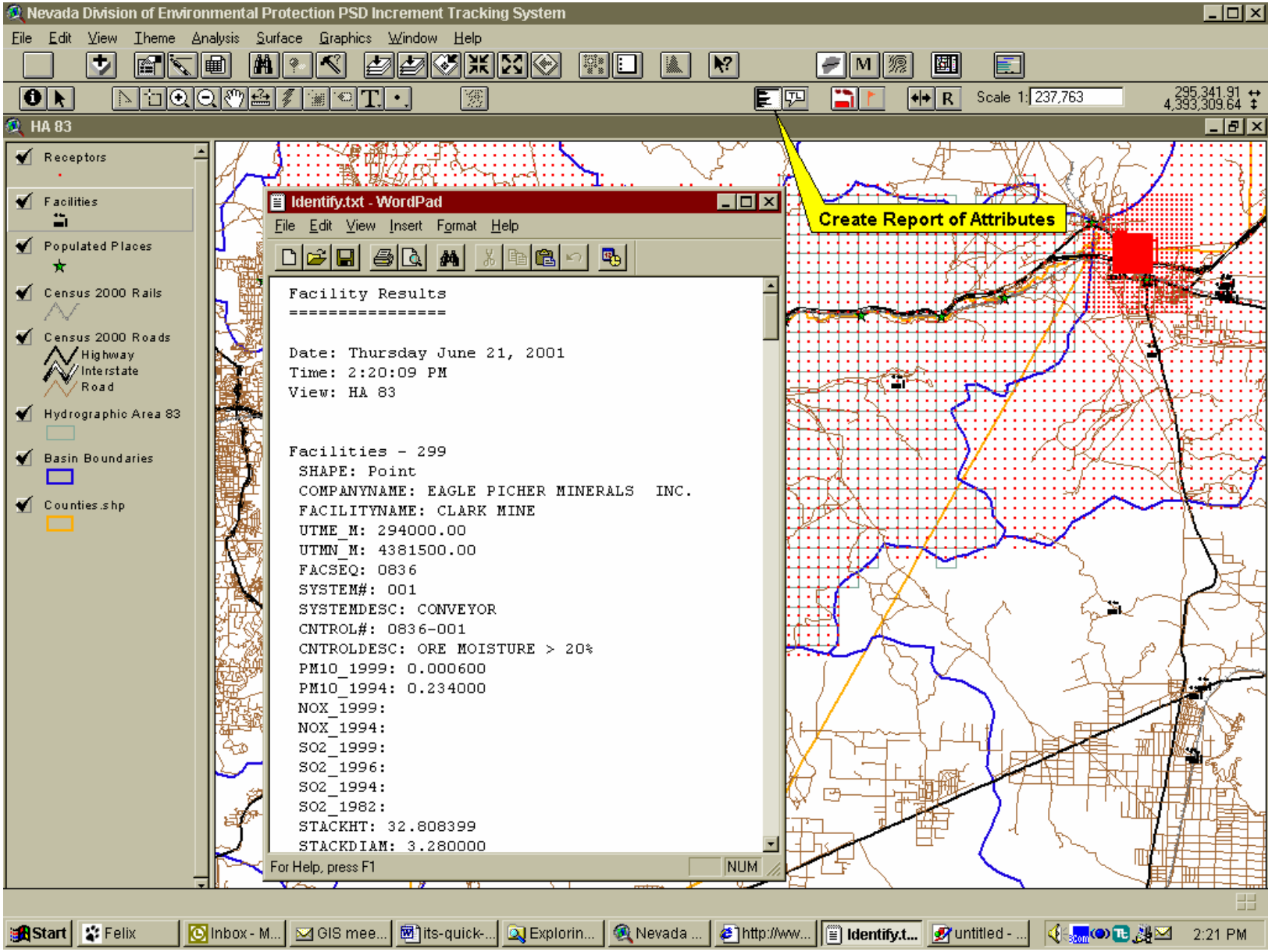


FIGURE 12
CREATE FACILITY ATTRIBUTE BOXES FOR MAP DISPLAY

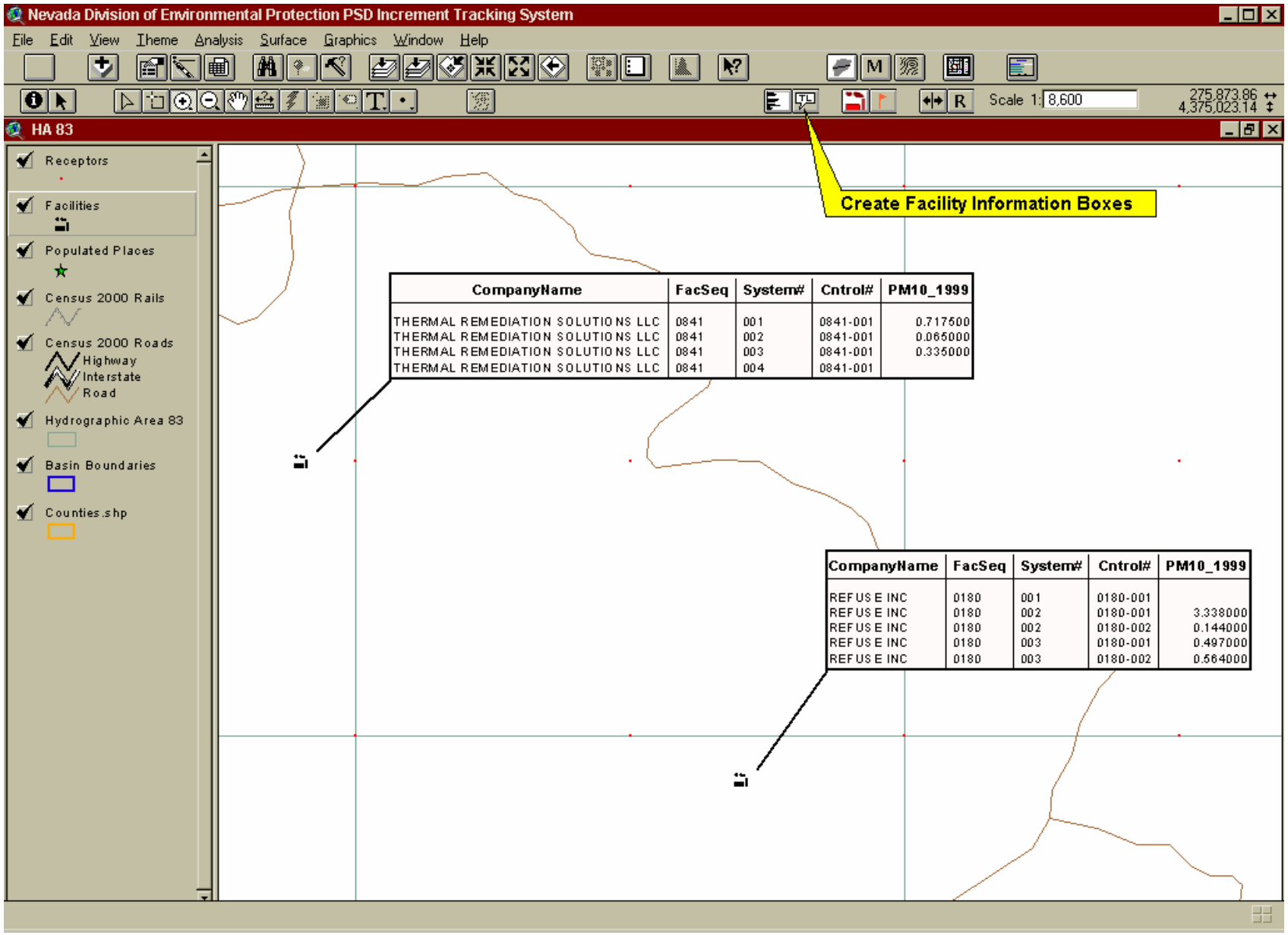
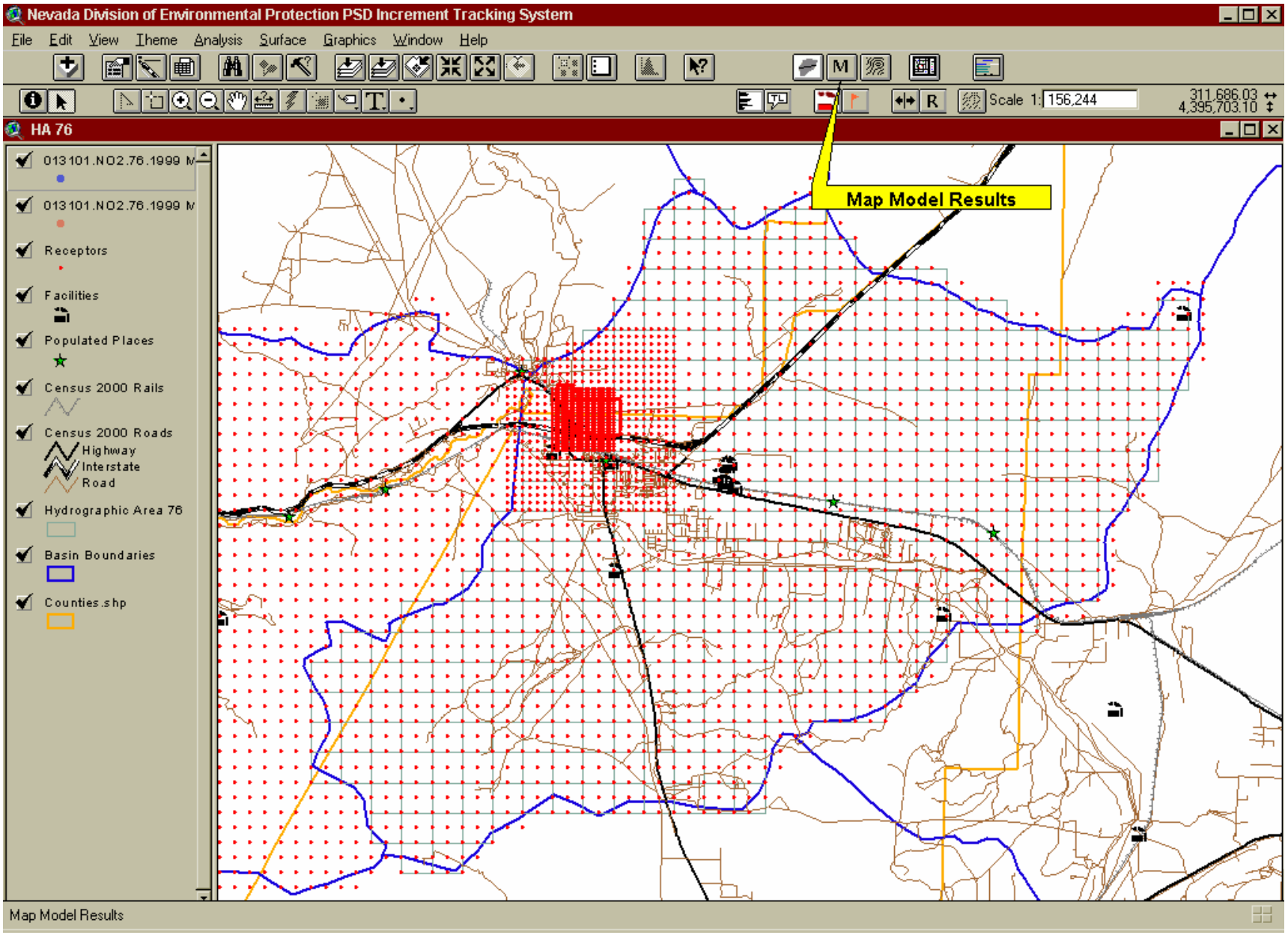


FIGURE 13
MAP MODEL RESULTS



1.7 SYSTEM INTEROPERABILITY

1.7.1 Shared Data

As previously mentioned, the Facilities theme in the ArcView component of the ITS is created dynamically from the PSD_Companies table in the Access component of the ITS by an Access ODBC link. Facilities can be added or edited within ArcView by using the appropriate tools (see sections 1.6.2 and 1.6.3) to pass updates to Access. The Receptors theme is also linked dynamically to Access receptor data in the ReceptorLU table. Receptors can be added to this table (and therefore the Receptors theme) using the tool to add receptors (see section 1.6.4). Area source emissions data are also referenced dynamically by the ArcView component of the ITS. It is available in each of the three basin Hydrographic Area themes. These data cannot be modified within ArcView. To update area source emissions, launch the Access component of the ITS. These themes are refreshed each time the ArcView component of the ITS is started, after the user returns from opening and making changes in Access, and manually by the user by pushing the Refresh Access Data button.

1.7.2 Static Data Sets

Static data sets in the ArcView component of the ITS include the base map themes and the 1-km area grid. See Attachment A for a list of these files and their metadata.

ATTACHMENT A
GIS METADATA FOR NDEP PSD STUDY

Theme Name	Shapefile Name	Description	Feature Type	Source	Survey Year	Projection	Units	Notes
Census 2000 Roads	Roads-census-utm.shp	Roads	Line	TIGER	2000	UTM 83 11	Meters	
Census 2000 Rails	Rails-census-utm.shp	Railroads	Line	TIGER	2000	UTM 83 11	Meters	
Hydrographic Area 76	Basin76-1k-grid.shp	1 kilometer grid	Poly	Derived In-house	2001	UTM 83 11	Meters	
Hydrographic Area 83	Basin83-1k-grid.shp	1 kilometer grid	Poly	Derived In-house	2001	UTM 83 11	Meters	
Hydrographic Area 85	Basin85-1k-grid.shp	1 kilometer grid	Poly	Derived In-house	2001	UTM 83 11	Meters	
Counties	Counties.shp	Nevada counties	Poly	Original data from State of Nevada		UTM 83 11	Meters	
Basin Boundaries	ha-basins.shp	Hydrographic areas	Poly	Original data from State of Nevada		UTM 83 11	Meters	
Populated Places	Populated-places.shp	Populated places in Nevada	Point	Derived from USGS GNIS		UTM 83 11	Meters	
	Study-grid.grd	Study area 30 meter USGS DEMs	Grid	USGS 30 meter DEMs		UTM 83 11	Meters	
Facilities	Event theme from Access connect	Dynamic connect to Access DB	Point	Access database		UTM 83 11	Meters	
Receptors	Event theme from Access connect	Dynamic connect to Access DB	Point	Access database		UTM 83 11	Meters	

APPENDIX D

POINT SOURCE DATA LISTING

NDEP PSD Summary Report

Company Name: BARRICK GOLDSTRIKE MINES
GOLDSTRIKE MINE

Facility ID 2
FacSeq: 2

Associated Basin

Basin	Inside	Within 50 Km
61	☑	☐
64	☐	☑

Facility Pollutant Total

2001	Sum Of Hr Emiss Lmt	Unit
PM	90.80	LB/HR
SO	58.47	LB/HR

Pollutant by system

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
001	Mill crushing system	554900	4536300	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill crushing system

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	5.06	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
002	Mill Conveyor #304	554800	4536100	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill Conveyor #304

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.10	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
003	Dump pocket, Gyratory, Conveyor #101	554900	4536200	1702

Cntrol# 0216-001 **Cntrol Desc:** Dump pocket, Gyratory, Conveyor #1

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.44	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
004	Shorthead cone crusher, Conveyor #301	554600	4536100	1702

Cntrol# 0216-001 **Cntrol Desc:** Shorthead cone crusher, Conveyor #30

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.22	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
005	Mill carbon react. kiln	554600	4536200	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill carbon react. Kiln

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.78	LB/HR	60.00	0.63	460.00	645.27
SO	0.00	LB/HR	60.00	0.63	460.00	645.27

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
006	Mill exp. carbon react. kiln	554600	4536200	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill exp. carbon react. Kiln

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	4.03	LB/HR	64.00	1.33	364.00	4251.23
SO	0.00	LB/HR	64.00	1.33	364.00	4251.23

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
008	West furnace	554500	4536200	1702

Cntrol# 0216-001 **Cntrol Desc:** West furnace

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.40	LB/HR	68.00	1.00	118.00	1932.08

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
009	East furnace	554500	4536200	1702

Cntrol# 0216-001 **Cntrol Desc:** East furnace

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.40	LB/HR	68.00	1.00	118.00	1932.08

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
010	Autoclave #1	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave #1

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.65	LB/HR	100.00	3.70	195.00	11418.73
SO	0.29	LB/HR	100.00	3.70	195.00	11418.73

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
011	Autoclave #2 and 3	554700	4536100	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave #2 and 3

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	4.48	LB/HR	100.00	6.20	195.00	71370.83
SO	0.90	LB/HR	100.00	6.20	195.00	71370.83

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
012	Autoclave #4	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave #4

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.24	LB/HR	100.00	4.20	196.00	46384.61
SO	0.45	LB/HR	100.00	4.20	196.00	46384.61

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
013	Autoclave #5 and 6	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave #5 and 6

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	4.48	LB/HR	100.00	6.20	196.00	71370.83
SO	0.90	LB/HR	100.00	6.20	196.00	71370.83

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
014	Propane vaporizers	554900	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Propane vaporizers

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	6.50	0.81	350.00	951.96
SO	0.00	LB/HR	6.50	0.81	350.00	951.96

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
015	Autoclave lime silo #1 (load)	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #1 (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.16	LB/HR	53.00	0.50	68.00	650.31

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
016	Autoclave lime silo #1 (discharge)	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #1 (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.04	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
017	Autoclave lime silo #2 (load)	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #2 (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	65.00	0.50	68.00	1201.66

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
018	Autoclave lime silo #2 (discharge)	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #2 (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
019	Autoclave lime silo #3 (load)	554800	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #3 (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	65.00	0.50	68.00	1201.66

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
020	Autoclave lime silo #3 (discharge)	554800	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #3 (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
021	Autoclave lime silo #4 (load)	554800	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #4 (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	106.50	0.63	68.00	1591.67

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
022	Autoclave lime silo #4 (discharge)	554800	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #4 (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.12	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
024	Analytical lab. (sample prep.)	554400	4535900	1692

Cntrol# 0216-001 **Cntrol Desc:** Analytical lab. (sample prep.)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.02	LB/HR	39.00	4.00	68.00	46973.09

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
025	Analytical lab. (fire assay)	554400	4535900	1692

Cntrol# 0216-001 **Cntrol Desc:** Analytical lab. (fire assay)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.11	LB/HR	39.00	4.47	68.00	40021.53

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
026	Metallurgical lab. (sample prep.)	554300	4536000	1692

Cntrol# 0216-001 **Cntrol Desc:** Metallurgical lab. (sample prep.)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	13.00	2.00	68.00	7143.98

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
027	Metallurgical lab. (fire assay)	554300	4536000	1692

Cntrol# 0216-001 **Cntrol Desc:** Metallurgical lab. (fire assay)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.03	LB/HR	23.00	2.31	100.00	7191.69

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
029	Phase 1 leach pond lime silo (load)	555100	4536000	1714

Cntrol# 0216-001 **Cntrol Desc:** Phase 1 leach pond lime silo (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.16	LB/HR	40.00	3.28	68.00	205.27

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
030	Phase 1 leach pond lime silo (discharge)	555100	4536000	1714

Cntrol# 0216-001 **Cntrol Desc:** Phase 1 leach pond lime silo (discharg

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
031	Mill 1 lime silo (load)	554600	4536200	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill 1 lime silo (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.18	LB/HR	51.00	3.28	68.00	205.27

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
032	Mill 1 lime silo (discharge)	554600	4536200	1702

Cntrol# 0216-002 **Cntrol Desc:** Mill 1 lime silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.02	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
033	Mill 2 lime silo (load)	554600	4536100	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill 2 lime silo (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.18	LB/HR	51.00	3.28	68.00	205.27

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
034	Mill 2 lime silo (discharge)	554600	4536100	1702

Cntrol# 0216-001 **Cntrol Desc:** Mill 2 lime silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.03	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
035	Boiler #1	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Boiler #1

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.25	LB/HR	49.00	3.50	387.00	20781.64
SO	0.01	LB/HR	49.00	3.50	387.00	20781.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
036	Boilers #2 and 3	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Boilers #2 and 3

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.14	LB/HR	49.00	4.00	370.00	51270.79
SO	0.05	LB/HR	49.00	4.00	370.00	51270.79

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
037	Boiler #4	554800	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Boiler #4

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.38	LB/HR	60.00	6.95	420.00	109257.68
SO	0.05	LB/HR	60.00	6.95	420.00	109257.68

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
038	Autoclave lime silo #5 (load)	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #5 (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.16	LB/HR	44.00	0.83	68.00	1201.15

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
039	Autoclave lime silo #5 (discharge)	554700	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Autoclave lime silo #5 (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.06	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
040	Boulder Valley lime silo (load)	547100	4533300	1554

Cntrol# 0216-001 **Cntrol Desc:** Boulder Valley lime silo (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.16	LB/HR	95.00	0.63	68.00	609.73

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
041	Boulder Valley lime silo (discharge)	547100	4533300	1554

Cntrol# 0216-001 **Cntrol Desc:** Boulder Valley lime silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.24	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
042	Boulder Valley MgO silo (load)	547100	4533300	1554

Cntrol# 0216-001 **Cntrol Desc:** Boulder Valley MgO silo (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.16	LB/HR	83.00	0.63	68.00	609.73

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
043	Boulder Valley MgO silo (discharge)	547100	4533300	1554

Cntrol# 0216-001 **Cntrol Desc:** Boulder Valley MgO silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.04	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
044	Production shaft sinking	551800	4539300	1684

Cntrol# 0216-001 **Cntrol Desc:** Production shaft sinking

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	3.69	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
045	Backfill Plant Sources	552000	4539200	1684

Cntrol# 0216-001 **Cntrol Desc:** Backfill Plant Sources

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	7.17	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
046	Backfill plant cement silos (load)	552000	4539200	1684

Cntrol# 0216-001 **Cntrol Desc:** Backfill plant cement silos (load)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.22	LB/HR	56.00	0.92	68.00	2074.05

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
047	Backfill plant cement silos (discharge)	552000	4539200	1684

Cntrol# 0216-001 **Cntrol Desc:** Backfill plant cement silos (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.06	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
048	heap leaching lime silo (load & discharge)	552600	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** heap leaching lime silo (load & discha

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.40	LB/HR	56.00	0.92	68.00	2074.05

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
049	Mine air heaters	551900	4539300	1684

Cntrol# 0216-001 **Cntrol Desc:** Mine air heaters

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.37	LB/HR	32.80	3.28	68.00	16.64
SO	0.01	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
050	Rodeo Shaft headframe bucket	552100	4538100	1634

Cntrol# 0216-001 **Cntrol Desc:** Rodeo Shaft headframe bucket

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.02	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
051	Rodeo Shaft headframe chute	552100	4538100	1634

Cntrol# 0216-001 **Cntrol Desc:** Rodeo Shaft headframe chute

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.18	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
052	Reactivation heater & O2 vaporizer	554600	4536000	1702

Cntrol# 0216-001 **Cntrol Desc:** Reactivation heater & O2 vaporizer

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.25	LB/HR	15.00	2.00	250.00	4146.90

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
053	Crushing and screening plant	552000	4539500	1684

Cntrol# 0216-001 **Cntrol Desc:** Crushing and screening plant

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
054	Concrete batch plant	552000	4539500	1684

Cntrol# 0216-001 **Cntrol Desc:** Concrete batch plant

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
055	primary crushing	552600	4538600	1652

Cntrol# 0216-001 **Cntrol Desc:** primary crushing

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.59	LB/HR	85.00	3.80	68.00	46271.89

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
056	secondary crushing	552500	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** secondary crushing

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.29	LB/HR	85.00	2.70	68.00	23016.72

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
057	coarse ore & aggregate belt conveyor	552400	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** coarse ore & aggregate belt conveyor

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.12	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
058	coarse ore stockpile apron feeders	552300	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** coarse ore stockpile apron feeders

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.29	LB/HR	32.80	3.28	0.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
059	emergency dump hoppers	552400	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** emergency dump hoppers

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.77	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
062	Mill No. 1 dry grinding process	552200	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** Mill No. 1 dry grinding process

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	12.60	LB/HR	230.00	9.00	200.00	280017.69
SO	4.28	LB/HR	230.00	9.00	200.00	280017.69

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
063	Mill No. 2 dry grinding process	552200	4538400	1652

Cntrol# 0216-001 **Cntrol Desc:** Mill No. 2 dry grinding process

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	12.60	LB/HR	230.00	9.00	200.00	280017.69
SO	4.28	LB/HR	230.00	9.00	200.00	280017.69

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
064	Roaster Nos. 1 & 2 pick-up point baghouses	552200	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** Roaster Nos. 1 & 2 pick-up point bagh

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.01	LB/HR	70.00	2.30	68.00	18000.90

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
065	ore roasting (2 roasters, common stack)	552100	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** ore roasting (2 roasters, common stack

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	6.00	LB/HR	260.00	5.00	300.00	49150.22
SO	44.90	LB/HR	260.00	5.00	300.00	49150.22

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
066	roaster quench tanks	552100	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** roaster quench tanks

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.74	LB/HR	40.00	2.50	68.00	9748.75

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
067	coal silo (loading)	552200	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** coal silo (loading)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	60.00	1.00	68.00	1220.04

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
068	coal silo (discharge)	552200	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** coal silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.04	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
069	propane vaporizers	552100	4538400	1646

Cntrol# 0216-001 **Cntrol Desc:** propane vaporizers

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	6.50	0.81	350.00	951.96
SO	0.01	LB/HR	6.50	0.81	350.00	951.96

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
070	lime silo (loading)	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** lime silo (loading)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	98.00	1.00	68.00	1220.04

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
071	lime silo (discharge)	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** lime silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.08	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
072	lime silo (screw conveyor transfer)	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** lime silo (screw conveyor transfer)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.08	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
073	Mill lime silo (loading)	552300	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** Mill lime silo (loading)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
074	Mill lime silo (discharges)	552300	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** Mill lime silo (discharges)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.04	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
075	Mill lime silo (screw conveyors transfer)	552300	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** Mill lime silo (screw conveyors transf

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.20	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
076	soda ash silo (loading)	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** soda ash silo (loading)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	98.00	1.00	68.00	1220.04

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
077	soda ash silo (discharge)	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** soda ash silo (discharge)

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.08	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
078	soda ash silo (screw conveyor transfer)	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** soda ash silo (screw conveyor transfer

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.08	LB/HR	32.80	3.28	68.00	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
079	oxygen plant - reactivation heaters	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** oxygen plant - reactivation heaters

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.12	LB/HR	15.00	2.00	250.00	4099.78
SO	0.02	LB/HR	15.00	2.00	250.00	4099.78

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
080	oxygen plant - liquid oxygen vaporizer	552100	4538500	1646

Cntrol# 0216-001 **Cntrol Desc:** oxygen plant - liquid oxygen vaporizer

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.18	LB/HR	15.00	2.00	250.00	11807.36
SO	0.03	LB/HR	15.00	2.00	250.00	11807.36

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
081	emergency generators	552200	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** emergency generators

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.60	LB/HR	15.00	1.17	765.00	10120.00
SO	2.28	LB/HR	15.00	1.17	765.00	10120.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
082	vacuum housekeeping system	552200	4538500	1652

Cntrol# 0216-001 **Cntrol Desc:** vacuum housekeeping system

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.51	LB/HR	32.80	3.28	0.00	16.64

NDEP PSD Summary Report

Company Name: BATTLE MOUNTAIN GOLD CO.
COPPER CANYON PROJECT

Facility ID 4
FacSeq: 4

Associated Basin

Basin	Inside	Within 50 Km
64	☑	☐

Facility Pollutant Total

1977	Sum Of Hr Emiss Lmt	Unit
PM	118.60	LB/HR

2001	Sum Of Hr Emiss Lmt	Unit
PM	18.22	LB/HR

Pollutant by system

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
001	Primary crushing system	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Primary Crusher

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	20.00	LB/HR	32.81	3.28	-459.65	16.64

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.87	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
002	Secondary Crushing System	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Secondary Crushing System

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	18.80	LB/HR	32.81	3.28	-459.65	16.64

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
003	Tertiary crushing system	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Two unit tertiary crushing system

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	59.90	LB/HR	32.81	3.28	-459.65	16.64
	Hr Emiss Lmt	**Unit**	**StkHt**	**StkDiam**	**StkTemp(F)**	**StkFlow**
PM	2.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
004	Electrowinning System	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Electrowinning System

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.25	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
005	Rotary Kiln	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Rotary Kiln

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.03	LB/HR	50.00	1.33	140.02	3500.00
SO		LB/HR	50.00	1.33	140.02	3500.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
006	Fine ore bin and mill feed	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Fine ore bin and mill feed

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	19.90	LB/HR	32.81	3.28	-459.65	16.64
	Hr Emiss Lmt	**Unit**	**StkHt**	**StkDiam**	**StkTemp(F)**	**StkFlow**
PM	0.75	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
007	Cement bin w/ conveyor	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Cement bin w/ conveyor

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.01	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
008	Natural Gas-fired boiler	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Natural Gas-fired boiler

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.10	LB/HR	32.81	0.98	398.95	1497.75
SO		LB/HR	32.81	0.98	398.95	1497.75

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
009	Sample prep facility	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Sample prep facility

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.52	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
010	Induction furnaces	489741	4488091	2289

Cntrol# 0219-010 **Cntrol Desc:** Induction furnaces

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.17	LB/HR	32.81	3.28	-459.65	16.64
SO		LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
011	Prell storage tanks	489741	4488091	2289

Cntrol# 0219-011 **Cntrol Desc:** Prell storage tanks

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	3.32	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
018	Zinc pot	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Zinc pot

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
020	Labs, Copper Canyon	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Labs, Copper Canyon

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	4.10	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
021	Labs, Copper Basin	489741	4488091	2289

Cntrol# 0219-001 **Cntrol Desc:** Labs, Copper Basin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	4.10	LB/HR	32.81	3.28	-459.65	16.64

NDEP PSD Summary Report

Company Name: COASTAL CHEM, INC.
BATTLE MOUNTAIN CHEMICAL PLANT

Facility ID 3
FacSeq: 3

Associated Basin

Basin	Inside	Within 50 Km
61	☑	☐
64	☐	☑

Facility Pollutant Total

2001	Sum Of Hr Emiss Lmt	Unit
PM	23.48	LB/HR

Pollutant by system

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
001	4 CHAMBER PRILL TOWER	511316	4504096	1815

Cntrol# 0256-001 **Cntrol Desc:** PRILL TOWER 1

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	3.50	LB/HR	231.96	4.99	74.95	70361.41

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
002	4 CHAMBER PRILL TOWER	511322	4504090	1818

Cntrol# 0256-001 **Cntrol Desc:** PRILL TOWER 2

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	3.50	LB/HR	231.96	4.99	74.95	70361.41

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
003	4 CHAMBER PRILL TOWER	511312	4504090	1817

Cntrol# 0256-001 **Cntrol Desc:** PRILL TOWER 3

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	3.50	LB/HR	231.96	4.99	74.95	70361.41

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
004	4 CHAMBER PRILL TOWER	511318	4504085	1819

Cntrol# 0256-001 **Cntrol Desc:** PRILL TOWER 4

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	3.50	LB/HR	231.96	4.99	74.95	70361.41

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
005	EVAPORATOR/AMMONIUM NITRATE PREDRYER/DRYER/COOLER	511349	4504058	1828

Cntrol# 0256-001 **Cntrol Desc:** EVAPORATOR/AMMONIUM NITR

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	8.76	LB/HR	100.07	4.99	83.95	55750.84

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
006	BULK SOLIDS HANDLING	511369	4504003	1841

Cntrol# 0256-001 **Cntrol Desc:** BULK SOLIDS HANDLING

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.46	LB/HR	16.40	0.98	74.95	1.50

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
007	VOLCANO INTERNATIONAL WATER TUBE BOILER	511265	4504167	1778

Cntrol# 0256-001 **Cntrol Desc:** WATER TUBE STEAM BOILER

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.20	LB/HR	27.89	3.41	224.35	10079.78

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
008	SCOTCH MARINE TUBE BOILER	511260	4504165	1779

Cntrol# 0256-001 **Cntrol Desc:** FIRE TUBE STEAM BOILER

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.06	LB/HR	27.89	2.00	224.35	2538.87

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
009	NITRIC ACID PLANT	511256	4504131	1778

Cntrol# 0256-001 **Cntrol Desc:** NITRIC ACID PLANT

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM			200.13	2.95	535.75	56480.08

NDEP PSD Summary Report

Company Name: GLAMIS MARIGOLD MINING
MARIGOLD MINE

Facility ID 6
FacSeq: 6

Associated Basin

Basin	Inside	Within 50 Km
64	☑	☐

Facility Pollutant Total

2001	Sum Of Hr Emiss Lmt	Unit
PM	15.41	LB/HR

Pollutant by system

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
002	Pioneer jaw & Symons cone crushers	487436	4510822	1373

Cntrol# 0158-001 **Cntrol Desc:** Pioneer jaw & Symons cone crushers

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.59	LB/HR	10.99	2.00	72.07	9450.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
003	Screening system	487486	4510785	1374

Cntrol# 0158-001 **Cntrol Desc:** Screening system

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.62	LB/HR	12.99	2.00	72.07	9450.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
004	Radial stacker system	487422	4510830	1373

Cntrol# 0158-001 **Cntrol Desc:** Radial stacker system

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.24	LB/HR	37.01	0.75	72.07	1400.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
005	Ore stockpile system	487422	4510830	1373

Cntrol# 006-005 **Cntrol Desc:** Baghouse#5 to conveyor6-Ore stockpi

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
008	Mill feed lime silo system	487428	4510861	1373

Cntrol# 006-08A **Cntrol Desc:** lime silo unloading

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.81	3.28	-459.65	16.64

Cntrol# 006-08B **Cntrol Desc:** Lime silo loading

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.27	LB/HR	35.01	0.92	72.07	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
009	Crushing lime silo system	487468	4510780	1374

Cntrol# 006-009 **Cntrol Desc:** Lime silo loading

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.89	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
010	carbon kiln system	487387	4510905	1373

Cntrol# 0158-001 **Cntrol Desc:** carbon kiln

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.03	LB/HR	25.00	1.00	1199.95	

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
011	Retort	487387	4510905	1373

Cntrol# 006-011 **Cntrol Desc:** Retort

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
012	crucible tilting furnace	487387	4510905	1373

Cntrol# 0158-001 **Cntrol Desc:** crucible tilting furnace

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.87	LB/HR	29.99	1.21	1879.99	

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
01A	Ore handling system	487403	4510768	1374

Cntrol# 006-01A **Cntrol Desc:** dump into hopper feeder

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
01B	Ore handling system	487447	4510787	1374

Cntrol# 006-01B **Cntrol Desc:** transfer - hopper feeder to grizzly

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
01C	Ore handling system	487456	4510824	1373

Cntrol# 006-01C **Cntrol Desc:** transfer - grizzly to jaw crusher

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
04A	Radial stacker system (alternative)	487510	4510793	1373

Cntrol# 006-04A **Cntrol Desc:** Radial stacker (alternative) conveyor5

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06A	Mill feed system	487445	4510841	1373

Cntrol# 006-06A **Cntrol Desc:** Conveyor feeder #1

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06B	Mill feed system	487432	4510920	1373

Cntrol# 006-06B **Cntrol Desc:** Conveyor feeder #2

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06C	Mill feed system	487345	4511041	1372

Cntrol# 006-06C **Cntrol Desc:** Conveyor #7

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
07A	Baghouse material handling system	487436	4510822	1373

Cntrol# 006-07A **Cntrol Desc:** baghouse#2 to conveyor #2

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
07B	Baghouse material handling system	487436	4510785	1374

Cntrol# 006-07B **Cntrol Desc:** baghouse#4 to conveyor #4

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
07C	Baghouse material handling system	487422	4510830	1373

Cntrol# 006-07C **Cntrol Desc:** baghouse#5 to conveyor #6

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
2AA	Crushing system (alternative)	487473	4510848	1373

Cntrol# 006-2AA **Cntrol Desc:** transfer - conveyor8 to conveyor9

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
2AB	Crushing system (alternative)	487435	4510761	1374

Cntrol# 006-2AB **Cntrol Desc:** transfer - conveyor8 to stockpile

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
6AA	Mill feed system (alternative)	487448	4510919	1373

Cntrol# 006-6AA **Cntrol Desc:** backup hopper loading

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
6AB	Mill feed system (alternative)	487441	4510834	1373

Cntrol# 006-6AB **Cntrol Desc:** hopper to conveyor #7

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
6AC	Mill feed system (alternative)	487345	4511041	1372

Cntrol# 006-6AC **Cntrol Desc:** conveyor #7

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

NDEP PSD Summary Report

Company Name: M-I DRILLING FLUIDS COMPANY
CLIPPER MINE

Facility ID 1
FacSeq: 1

Associated Basin

Basin	Inside	Within 50 Km
64	☑	☐

Pollutant by system

Facility Pollutant Total

1977	Sum Of Hr Emiss Lmt	Unit
PM	23.54	LB/HR
2001	**Sum Of Hr Emiss Lmt**	**Unit**
PM	6.30	LB/HR
SO	0.14	LB/HR

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
001	System Loading	504921	4499801	1373

Cntrol# 0369-001 **Cntrol Desc:** System Loading

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.11	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
002	Hopper to Conveyor	504921	4499801	1373

Cntrol# 0369-002 **Cntrol Desc:** Hopper to Conveyor

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.05	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
003	Trommel Screen	504921	4499801	1373

Cntrol# 0369-003 **Cntrol Desc:** Trommel Screen

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.32	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
004	Jaw Crusher	504921	4499801	1373

Cntrol# 0369-004 **Cntrol Desc:** Crusher

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	17.11	LB/HR	32.81	3.28	-459.65	16.64

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.38	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
005	Cage Mill	504921	4499801	1373

Cntrol# 0369-005 **Cntrol Desc:** Cage Mill

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.47	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
006	Hoppers	504921	4499801	1373

Cntrol# 0369-006 **Cntrol Desc:** Hoppers

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.21	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
007	Bins # 1 and # 2 Load	504921	4499801	1373

Cntrol# 0369-007 **Cntrol Desc:** Bins #1 and # 2 Load

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.21	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
008	Glass Sand Bulk Loadout	504921	4499801	1373

Cntrol# 0369-008 **Cntrol Desc:** Glass Sand Bulk Loadout

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.04	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
009	Bins # 1 and # 2 Discharge	504921	4499801	1373

Cntrol# 0369-009 **Cntrol Desc:** Bins # 1 and # 2 Discharge

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.03	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
010	Transfer to Mills # 1, 2, 3, and 4	504921	4499801	1373

Cntrol# 0369-010 **Cntrol Desc:** Transfer to Mills # 1, 2, 3, and 4

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.03	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
011	#1 Raymond Mill	504921	4499801	1373

Cntrol# 0369-011 **Cntrol Desc:** # 1 Raymond Mill

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.53	LB/HR	32.81	3.28	-459.65	16.64

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.28	LB/HR	32.81	3.28	-459.65	16.64
SO	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
012	#2 Raymond Mill	504921	4499801	1373

Cntrol# 0369-012 **Cntrol Desc:** #2 Raymond Mill

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.25	LB/HR	32.81	3.28	-459.65	16.64

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.28	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
013	#3 Raymond Mill	504921	4499801	1373

Cntrol# 0369-013 **Cntrol Desc:** #3 Raymond Mill

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.25	LB/HR	32.81	3.28	-459.65	16.64

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.28	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
014	Raymond Mill # 4	504921	4499801	1373

Cntrol# 0369-014 **Cntrol Desc:** Raymond Mill #4

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.28	LB/HR	32.81	3.28	-459.65	16.64
SO	0.00	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
015	Load Tanks # 1 - # 4 via Screw Conveyor	504921	4499801	1373

Cntrol# 0369-015 **Cntrol Desc:** Load Tanks # 1 - # 4 via Screw Conve

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.03	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
016	Storage Tank # 1	504921	4499801	1373

Cntrol# 0369-016 **Cntrol Desc:** Storage Tank # 1

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.02	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
017	Storage Tank # 2	504921	4499801	1373

Cntrol# 0369-017 **Cntrol Desc:** Storage Tank # 2

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
018	Storage Tank # 3	504921	4499801	1373

Cntrol# 0369-018 **Cntrol Desc:** Storage Tank # 3

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.34	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
019	Blow Bottle Loadout	504921	4499801	1373

Cntrol# 0369-019 **Cntrol Desc:** Blow Bottle Loadout

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
020	Bulk Fines Loadout to Railcars	504921	4499801	1373

Cntrol# 0369-020 **Cntrol Desc:** Bulk Fines Loadout to Railcars

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
021	Packing Circuit	504921	4499801	1373

Cntrol# 0369-021 **Cntrol Desc:** Packing Circuit

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.45	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
022	Bulk # 2 Transfer to Loadout	504921	4499801	1373

Cntrol# 0369-022 **Cntrol Desc:** Bulk # 2 Transfer to Loadout

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
SO	0.14	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
023	Bulk # 2 Loading	504921	4499801	1373

Cntrol# 0369-023 **Cntrol Desc:** Bulk # 2 Loading

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.07	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
024	Bulk # 2 Loadout to Trucks	504921	4499801	1373

Cntrol# 0369-024 **Cntrol Desc:** Bulk # 2 Loadout to Trucks

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
190	Jeffrey Hammer Mill/Drago Bag Collector	504921	4499801	1373

Cntrol# 0369-190 **Cntrol Desc:** Jeffrey Hammer Mill/Drago Bag Colle

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	4.63	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
191	Bulk Loading	504921	4499801	1373

Cntrol# 0369-191 **Cntrol Desc:** Bulk Loading

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.63	LB/HR	32.81	3.28	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
192	St. Regis Bag Packer/Drago Baghouse	504921	4499801	1373

Cntrol# 0369-192 **Cntrol Desc:** St. Regis Bag Packer/Drago Baghouse

Year: 1977

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	32.81	3.28	-459.65	16.64

NDEP PSD Summary Report

Company Name: SIERRA PACIFIC POWER CO.
VALMY GENERATING STATION

Facility ID 7
FacSeq: 7

Associated Basin

Basin	Inside	Within 50 Km
64	☑	☐

Facility Pollutant Total

2001	Sum Of Hr Emiss Lmt	Unit
PM	981.06	LB/HR
SO	4802.93	LB/HR

Pollutant by system

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
001	Unit #1 Boiler	487130	4525593	1356

Cntrol# 0457-001 **Cntrol Desc:** Unit #1 Boiler

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	426.12	LB/HR	500.00	19.00	285.19	1119139.70
SO	3072.00	LB/HR	500.00	19.00	285.19	1119139.70

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
002	Unit #2 Boiler	487216	4525661	1356

Cntrol# 0457-001 **Cntrol Desc:** Unit #2 Boiler

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	466.65	LB/HR	450.13	16.99	203.00	974339.58
SO	1728.61	LB/HR	450.13	16.99	203.00	974339.58

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
009	Auxilliary Boiler	487101	4525463	1355

Cntrol# 0457-001 **Cntrol Desc:** Auxilliary Boiler

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.61	LB/HR	189.96	2.00	542.95	3506.39
SO	2.32	LB/HR	189.96	2.00	542.95	3506.39

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03A	Coal Handling System	487428	4525929	1357

Cntrol# 0457-001 **Cntrol Desc:** Rotary Stacker

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.13	LB/HR	11.00	1.50	-459.65	900.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03B	Coal Handling System	487429	4525867	1357

Cntrol# 0457-001 **Cntrol Desc:** Transfer tower A

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.31	LB/HR	62.99	0.90	-459.65	9000.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03C	Coal Handling System	487374	4525867	1357

Cntrol# 0457-001 **Cntrol Desc:** Reclaim area hopper

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.60	LB/HR	18.01	1.30	-459.65	11000.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03D	Coal Handling System	487317	4525814	1355

Cntrol# 0457-001 **Cntrol Desc:** Crusher tower

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.75	LB/HR	75.98	2.30	-459.65	12000.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03E	Coal Handling System	487099	4525706	1350

Cntrol# 0457-001 **Cntrol Desc:** Transfer tower B

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.28	LB/HR	83.99	0.90	-459.65	8800.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03F	Coal Handling System	487173	4525449	1356

Cntrol# 0457-001 **Cntrol Desc:** Tripper area hopper

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.28	LB/HR	191.01	0.90	-459.65	8800.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03G	Coal Handling System	487173	4525449	1356

Cntrol# 0457-001 **Cntrol Desc:** #1 Coal Silos A & B

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.75	LB/HR	170.00	1.20	-459.65	12000.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03H	Coal Handling System	487173	4525449	1356

Cntrol# 0457-001 **Cntrol Desc:** #1 Coal Silos C & D

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	1.75	LB/HR	170.00	1.20	-459.65	12000.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03I	Coal Handling System	487173	4525449	1356

Cntrol# 0457-001 **Cntrol Desc:** #2 Coal Silos A & B

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.00	LB/HR	149.00	1.40	-459.65	13760.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
03J	Coal Handling System	487173	4525449	1356

Cntrol# 0457-001 **Cntrol Desc:** #2 Coal Silos C & D

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	2.00	LB/HR	149.00	1.40	-459.65	13760.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
04K	Circulating Water Treatment System	487434	4525461	1357

Cntrol# 0457-001 **Cntrol Desc:** #1 soda ash storage bin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	74.00	0.50	-459.65	960.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
04L	Circulating Water Treatment System	487435	4525452	1357

Cntrol# 0457-001 **Cntrol Desc:** #1 magnesium oxide storage bin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	74.00	0.50	-459.65	960.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
04M	Circulating Water Treatment System	487447	4525461	1357

Cntrol# 0457-001 **Cntrol Desc:** #2 soda ash storage bin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	74.00	1.20	-459.65	960.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
04N	Circulating Water Treatment System	487448	4525454	1357

Cntrol# 0457-001 **Cntrol Desc:** #2 magnesium oxide storage bin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	74.00	1.20	-459.65	960.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
05P	Fly Ash Handling System	487128	4525637	1351

Cntrol# 0457-001 **Cntrol Desc:** #1 unit fly ash silo

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.38	LB/HR	86.00	0.80	-459.65	2640.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
05Q	Fly Ash Handling System	487211	4525734	1350

Cntrol# 0457-001 **Cntrol Desc:** #2 unit fly ash silo

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.38	LB/HR	86.00	0.80	-459.65	2640.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06R	Unit 2 Lime Scrubber System	487193	4525544	1354

Cntrol# 0457-001 **Cntrol Desc:** Scrubber - loop 1 lime day storage bin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.41	LB/HR	77.00	1.40	-459.65	2800.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06S	Unit 2 Lime Scrubber System	487208	4525544	1354

Cntrol# 0457-001 **Cntrol Desc:** Scrubber - loop 2 lime day storage bin

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.41	LB/HR	77.00	1.40	-459.65	2800.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06T	Unit 2 Lime Scrubber System	487223	4525544	1355

Cntrol# 0457-001 **Cntrol Desc:** Scrubber - loop 1 recycle ash day stora

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.74	LB/HR	83.00	1.80	-459.65	5100.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06U	Unit 2 Lime Scrubber System	487238	4525544	1355

Cntrol# 0457-001 **Cntrol Desc:** Scrubber - loop 2 recycle ash day stora

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.74	LB/HR	83.00	1.80	-459.65	5100.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06V	Unit 2 Lime Scrubber System	487281	4525705	1351

Cntrol# 0457-001 **Cntrol Desc:** West lime storage silo

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	95.00	1.60	-459.65	960.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
06W	Unit 2 Lime Scrubber System	487288	4525709	1351

Cntrol# 0457-001 **Cntrol Desc:** East lime storage silo

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	0.14	LB/HR	95.00	1.60	-459.65	960.00

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
07X	Cooling Tower System	487288	4525709	1351

Cntrol# 0457-001 **Cntrol Desc:** Unit#1 Cooling tower

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	34.01	LB/HR	32.81	29.53	-459.65	16.64

System#	SystemDesc	UTME (m)	UTMN (m)	Elevation (m)
07Y	Cooling Tower System	487383	4525565	1356

Cntrol# 0457-001 **Cntrol Desc:** Unit#2 Cooling tower

Year: 2001

	Hr Emiss Lmt	Unit	StkHt	StkDiam	StkTemp(F)	StkFlow
PM	33.91	LB/HR	32.81	29.53	-459.65	16.64

APPENDIX E

RAILROAD SOURCE EMISSIONS CALCULATIONS

Railroad Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Rail Length Data: Census Bureau
Source of Rail Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

County	Total Rail Meters in County	Meters in Study Area for the County	% Rail Meters in Study Area for the County	Total Rail Emissions in County (tpy) SO2	Total Rail Emissions in County (tpy) PM10	Total Rail Emissions in Study Area for the County (tpy) SO2	Total Rail Emissions in Study Area for the County (tpy) PM10	Grid ID	Rail Length in Grid (meters)	% Rail Meters Grid per County	Total Rail Emissions in Grid (tpy) SO2	Total Rail Emissions in Grid (tpy) PM10
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-DDD20	423.904	0.01571	0.01792	0.00897
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-DDD21	1000.162	0.03707	0.04228	0.02117
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-EEE21	352.584	0.01307	0.01491	0.00746
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-EEE22	398.004	0.01475	0.01683	0.00842
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-EEE22	292.837	0.01085	0.01238	0.00620
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-EEE22	162.878	0.00604	0.00689	0.00345
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-EEE22	259.723	0.00963	0.01098	0.00550
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-FFF22	255.502	0.00947	0.01080	0.00541
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-FFF23	106.957	0.00396	0.00452	0.00226
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-FFF23	101.782	0.00377	0.00430	0.00215
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-FFF23	167.695	0.00622	0.00709	0.00355
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-FFF23	316.993	0.01175	0.01340	0.00671
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-FFF23	534.653	0.01982	0.02260	0.01132
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-GGG23	126.353	0.00468	0.00534	0.00267
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-GGG24	1353.1	0.05015	0.05720	0.02864
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-HHH24	3.693	0.00014	0.00016	0.00008
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-HHH25	1356.794	0.05029	0.05736	0.02872
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-HHH26	119.358	0.00442	0.00505	0.00253
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-III26	925.426	0.03430	0.03912	0.01959
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-III26	308.3	0.01143	0.01303	0.00653
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-III27	250.964	0.00930	0.01061	0.00531
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-JJJ27	1101.445	0.04083	0.04656	0.02331
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-JJJ28	383.867	0.01423	0.01623	0.00812
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-KKK28	242.211	0.00898	0.01024	0.00513
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-KKK28	726.331	0.02692	0.03071	0.01537
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-KKK29	516.632	0.01915	0.02184	0.01094
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-LLL29	843.221	0.03126	0.03565	0.01785
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-LLL30	635.937	0.02357	0.02688	0.01346
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-MMM20	461.197	0.01709	0.01950	0.00976
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-MMM21	381.173	0.01413	0.01611	0.00807
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-MMM30	213.939	0.00793	0.00904	0.00453
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-MMM30	28.459	0.00105	0.00120	0.00060
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-NNN21	1094.754	0.04058	0.04628	0.02317
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-NNN22	251.856	0.00934	0.01065	0.00533
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-OOO22	1209.555	0.04483	0.05114	0.02560
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-OOO23	170.471	0.00632	0.00721	0.00361
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-PPP23	1262.254	0.04679	0.05336	0.02672
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-PPP24	135.575	0.00503	0.00573	0.00287
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-QQQ24	1061.421	0.03934	0.04487	0.02247
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-QQQ24	240.389	0.00891	0.01016	0.00509
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-QQQ25	89.748	0.00333	0.00379	0.00190
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-RRR25	510.167	0.01891	0.02157	0.01080
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-RRR25	839.619	0.03112	0.03550	0.01777
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-RRR26	40.181	0.00149	0.00170	0.00085
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	196.586	0.00729	0.00831	0.00416
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	313.625	0.01162	0.01326	0.00664
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	308.612	0.01144	0.01305	0.00653
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	239.725	0.00889	0.01013	0.00507
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	116.815	0.00433	0.00494	0.00247

Railroad Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Rail Length Data: Census Bureau
Source of Rail Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

County	Total Rail Meters in County	Meters in Study Area for the County	% Rail Meters in Study Area for the County	Total Rail Emissions in County (tpy) SO2	Total Rail Emissions in County (tpy) PM10	Total Rail Emissions in Study Area for the County (tpy) SO2	Total Rail Emissions in Study Area for the County (tpy) PM10	Grid ID	Rail Length in Grid (meters)	% Rail Meters Grid per County	Total Rail Emissions in Grid (tpy) SO2	Total Rail Emissions in Grid (tpy) PM10
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	270.911	0.01004	0.01145	0.00573
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	327.287	0.01213	0.01384	0.00693
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	393.768	0.01460	0.01665	0.00833
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	58.173	0.00216	0.00246	0.00123
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS26	296.483	0.01099	0.01253	0.00628
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-SSS27	77.19	0.00286	0.00326	0.00163
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT26	11.27	0.00042	0.00048	0.00024
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	385.351	0.01428	0.01629	0.00816
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	178.356	0.00661	0.00754	0.00378
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	484.589	0.01796	0.02049	0.01026
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	141.585	0.00525	0.00599	0.00300
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	396.576	0.01470	0.01677	0.00839
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	386.546	0.01433	0.01634	0.00818
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	102.462	0.00380	0.00433	0.00217
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	124.44	0.00461	0.00526	0.00263
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	76.206	0.00282	0.00322	0.00161
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	146.462	0.00543	0.00619	0.00310
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	77.773	0.00288	0.00329	0.00165
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	127.839	0.00474	0.00540	0.00271
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	101.806	0.00377	0.00430	0.00215
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-TTT27	30.623	0.00114	0.00129	0.00065
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-UUU27	40.816	0.00151	0.00173	0.00086
Lander	94491.28	26978.54	0.28551	4	2	1.142	0.571	64-UUU28	308.563	0.01144	0.01304	0.00653
											1.142	**0.571**

Railroad Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Rail Length Data: Census Bureau
Source of Rail Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

County	Total Rail Meters in County	Meters in Study Area for the County	% Rail Meters in Study Area for the County	Total Rail Emissions in County (tpy) SO2	Total Rail Emissions in County (tpy) PM10	Total Rail Emissions in Study Area for the County (tpy) SO2	Total Rail Emissions in Study Area for the County (tpy) PM10	Grid ID	Rail Length in Grid (meters)	% Rail Meters Grid per County	Total Rail Emissions in Grid (tpy) SO2	Total Rail Emissions in Grid (tpy) PM10
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-AAA09	1236.177	0.02051	0.03553	0.01579
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-AAA17	374.897	0.00622	0.01078	0.00479
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-AAA17	525.163	0.00871	0.01510	0.00671
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-AAA18	589.027	0.00977	0.01693	0.00752
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB09	220.393	0.00366	0.00633	0.00282
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB09	127.634	0.00212	0.00367	0.00163
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB10	92.612	0.00154	0.00266	0.00118
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB10	633.514	0.01051	0.01821	0.00809
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB10	223.026	0.00370	0.00641	0.00285
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB18	760.357	0.01262	0.02186	0.00971
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-BBB19	729.212	0.01210	0.02096	0.00932
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-CCC10	547.379	0.00908	0.01573	0.00699
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-CCC11	837.413	0.01389	0.02407	0.01070
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-CCC19	619.836	0.01028	0.01782	0.00792
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-CCC20	867.676	0.01440	0.02494	0.01108
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-DDD11	599.638	0.00995	0.01724	0.00766
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-DDD12	627.016	0.01040	0.01802	0.00801
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-DDD12	166.021	0.00275	0.00477	0.00212
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-DDD20	60.831	0.00101	0.00175	0.00078
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-EEE12	238.584	0.00396	0.00686	0.00305
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-EEE12	304.707	0.00506	0.00876	0.00389
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-EEE12	106.087	0.00176	0.00305	0.00136
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-EEE13	740.986	0.01229	0.02130	0.00947
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-FFF13	36.308	0.00060	0.00104	0.00046
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-FFF13	656.861	0.01090	0.01888	0.00839
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-FFF14	328.518	0.00545	0.00944	0.00420
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-FFF14	376.03	0.00624	0.01081	0.00480
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GG01	314.605	0.00522	0.00904	0.00402
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GG01	161.343	0.00268	0.00464	0.00206
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GG01	319.347	0.00530	0.00918	0.00408
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GG02	10.431	0.00017	0.00030	0.00013
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GGG14	398.416	0.00661	0.01145	0.00509
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GGG14	327.964	0.00544	0.00943	0.00419
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GGG15	512.429	0.00850	0.01473	0.00655
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-GGG15	156.731	0.00260	0.00451	0.00200
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-HH02	1393.33	0.02312	0.04005	0.01780
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-HHH15	767.142	0.01273	0.02205	0.00980
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-HHH16	15.164	0.00025	0.00044	0.00019
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-HHH16	610.705	0.01013	0.01755	0.00780
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-HHH16	377.009	0.00625	0.01084	0.00482
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-HHH16	198.695	0.00330	0.00571	0.00254
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-II02	32.556	0.00054	0.00094	0.00042
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-II03	420.285	0.00697	0.01208	0.00537
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-II03	927.784	0.01539	0.02667	0.01185
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-III16	181.748	0.00302	0.00522	0.00232
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-III16	629.044	0.01044	0.01808	0.00804
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-III16	206.898	0.00343	0.00595	0.00264
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-III16	693.686	0.01151	0.01994	0.00886
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-III17	582.5	0.00966	0.01674	0.00744

Railroad Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Rail Length Data: Census Bureau
Source of Rail Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

County	Total Rail Meters in County	Meters in Study Area for the County	% Rail Meters in Study Area for the County	Total Rail Emissions in County (tpy) SO2	Total Rail Emissions in County (tpy) PM10	Total Rail Emissions in Study Area for the County (tpy) SO2	Total Rail Emissions in Study Area for the County (tpy) PM10	Grid ID	Rail Length in Grid (meters)	% Rail Meters Grid per County	Total Rail Emissions in Grid (tpy) SO2	Total Rail Emissions in Grid (tpy) PM10
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-III17	487.582	0.00809	0.01402	0.00623
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJ03	102.293	0.00170	0.00294	0.00131
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJ04	1252.69	0.02078	0.03601	0.01600
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJJ17	473.064	0.00785	0.01360	0.00604
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJJ17	88.798	0.00147	0.00255	0.00113
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJJ17	295.91	0.00491	0.00851	0.00378
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJJ17	522.851	0.00867	0.01503	0.00668
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-JJJ18	525.829	0.00872	0.01511	0.00672
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-KK04	266.969	0.00443	0.00767	0.00341
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-KK05	942.661	0.01564	0.02710	0.01204
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-KKK18	920.937	0.01528	0.02647	0.01177
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-KKK19	467.919	0.00776	0.01345	0.00598
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-LL05	798.436	0.01325	0.02295	0.01020
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-LL05	67.52	0.00112	0.00194	0.00086
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-LL06	61.522	0.00102	0.00177	0.00079
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-LL06	269.857	0.00448	0.00776	0.00345
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-LLL19	968.741	0.01607	0.02785	0.01238
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-LLL20	424.203	0.00704	0.01219	0.00542
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-MM06	1204.911	0.01999	0.03463	0.01539
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-MMM20	550.902	0.00914	0.01584	0.00704
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-NN06	261.153	0.00433	0.00751	0.00334
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-NN07	947.497	0.01572	0.02723	0.01210
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-OO07	840.754	0.01395	0.02417	0.01074
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-OO08	362.983	0.00602	0.01043	0.00464
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-PP08	1199.545	0.01990	0.03448	0.01532
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-QQ08	247.354	0.00410	0.00711	0.00316
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-QQ09	425.882	0.00707	0.01224	0.00544
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-QQ09	298.847	0.00496	0.00859	0.00382
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-QQ09	228.417	0.00379	0.00657	0.00292
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-RR09	368.827	0.00612	0.01060	0.00471
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-RR09	475.417	0.00789	0.01367	0.00607
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-RR10	361.009	0.00599	0.01038	0.00461
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-SS09	288.175	0.00478	0.00828	0.00368
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-SS09	266.594	0.00442	0.00766	0.00341
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-SS10	552.373	0.00916	0.01588	0.00706
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-SS10	653.841	0.01085	0.01879	0.00835
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-SS10	609.852	0.01012	0.01753	0.00779
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT09	104.142	0.00173	0.00299	0.00133
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT09	177.246	0.00294	0.00509	0.00226
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT09	724.245	0.01202	0.02082	0.00925
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT10	221.019	0.00367	0.00635	0.00282
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT11	616.286	0.01022	0.01771	0.00787
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT11	272.295	0.00452	0.00783	0.00348
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-TT11	97.715	0.00162	0.00281	0.00125
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU09	149.196	0.00248	0.00429	0.00191
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU09	71.046	0.00118	0.00204	0.00091
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU09	104.566	0.00173	0.00301	0.00134
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU09	340.974	0.00566	0.00980	0.00436
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU09	166.915	0.00277	0.00480	0.00213

Railroad Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Rail Length Data: Census Bureau
Source of Rail Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

County	Total Rail Meters in County	Meters in Study Area for the County	% Rail Meters in Study Area for the County	Total Rail Emissions in County (tpy) SO2	Total Rail Emissions in County (tpy) PM10	Total Rail Emissions in Study Area for the County (tpy) SO2	Total Rail Emissions in Study Area for the County (tpy) PM10	Grid ID	Rail Length in Grid (meters)	% Rail Meters Grid per County	Total Rail Emissions in Grid (tpy) SO2	Total Rail Emissions in Grid (tpy) PM10
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU09	181.617	0.00301	0.00522	0.00232
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU11	672.468	0.01116	0.01933	0.00859
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU11	126.162	0.00209	0.00363	0.00161
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-UU12	408.702	0.00678	0.01175	0.00522
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-VV08	82.852	0.00137	0.00238	0.00106
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-VV08	134.484	0.00223	0.00387	0.00172
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-VV09	1087.967	0.01805	0.03127	0.01390
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-VV12	1244.153	0.02064	0.03576	0.01589
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW06	363.299	0.00603	0.01044	0.00464
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW06	66.962	0.00111	0.00192	0.00086
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW08	186.659	0.00310	0.00537	0.00238
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW08	291.333	0.00483	0.00837	0.00372
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW08	417.407	0.00693	0.01200	0.00533
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW08	346.769	0.00575	0.00997	0.00443
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW12	52.843	0.00088	0.00152	0.00068
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW13	591.187	0.00981	0.01699	0.00755
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW13	772.038	0.01281	0.02219	0.00986
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-WW14	51.962	0.00086	0.00149	0.00066
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX06	103.889	0.00172	0.00299	0.00133
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX07	544.282	0.00903	0.01564	0.00695
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX07	452.854	0.00751	0.01302	0.00579
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX07	128.149	0.00213	0.00368	0.00164
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX07	852.516	0.01414	0.02450	0.01089
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX08	158.919	0.00264	0.00457	0.00203
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX08	53.634	0.00089	0.00154	0.00069
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX14	661.416	0.01097	0.01901	0.00845
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX14	639.033	0.01060	0.01837	0.00816
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-XX15	184.842	0.00307	0.00531	0.00236
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-YY07	145.409	0.00241	0.00418	0.00186
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-YY07	446.52	0.00741	0.01283	0.00570
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-YY08	637.656	0.01058	0.01833	0.00815
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-YY15	1159.532	0.01924	0.03333	0.01481
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-YY16	339.219	0.00563	0.00975	0.00433
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-ZZ08	59.32	0.00098	0.00171	0.00076
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-ZZ08	1034.912	0.01717	0.02975	0.01322
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-ZZ09	69.725	0.00116	0.00200	0.00089
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-ZZ09	59.302	0.00098	0.00170	0.00076
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-ZZ16	1017.63	0.01688	0.02925	0.01300
Humboldt	313108.40	60273.49	0.19250	9	4	1.733	0.770	64-ZZ17	454.394	0.00754	0.01306	0.00580
											1.733	**0.770**

APPENDIX F

MOBILE SOURCE EMISSIONS CALCULATIONS

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-AA12	0.648	0.000	0.000	0.001603	0.001781
64-AA13	1.690	0.000	0.000	0.004181	0.004646
64-AA14	2.098	0.000	0.000	0.005189	0.005765
64-AA15	0.662	0.000	0.000	0.001636	0.001818
64-AA16	0.882	0.000	0.000	0.002181	0.002424
64-AA19	1.334	0.000	0.000	0.003299	0.003665
64-AA20	0.291	0.000	0.000	0.000784	0.000876
64-AA21	1.122	0.000	0.000	0.003022	0.003376
64-AA24	0.623	0.000	0.000	0.001679	0.001876
64-AA26	0.625	0.000	0.000	0.001683	0.001880
64-AA27	0.647	0.000	0.000	0.001742	0.001946
64-AAA05	0.626	0.000	0.000	0.001549	0.001721
64-AAA06	0.268	0.000	0.000	0.000664	0.000737
64-AAA07	0.385	0.000	0.000	0.000952	0.001058
64-AAA08	1.050	0.592	0.000	0.029866	0.033184
64-AAA09	1.296	0.271	0.000	0.015697	0.017441
64-AAA10	0.707	0.000	0.000	0.001748	0.001942
64-AAA11	0.593	0.000	0.000	0.001467	0.001630
64-AAA17	0.488	0.000	0.000	0.001208	0.001342
64-AAA18	0.435	0.000	0.000	0.001076	0.001196
64-AAA26	0.233	0.000	0.000	0.000433	0.000449
64-AAA29	0.625	0.000	0.000	0.001163	0.001206
64-BB11	1.224	0.000	0.000	0.003027	0.003363
64-BB12	0.659	0.000	0.000	0.001631	0.001812
64-BB13	1.027	0.000	0.000	0.002541	0.002824
64-BB14	0.977	0.000	0.000	0.002416	0.002684
64-BB16	0.658	0.000	0.000	0.001626	0.001807
64-BB18	0.179	0.000	0.000	0.000443	0.000492
64-BB19	0.472	0.000	0.000	0.001169	0.001299
64-BB20	0.419	0.000	0.000	0.001107	0.001235
64-BB21	1.000	0.000	0.000	0.002694	0.003010
64-BB24	0.623	0.000	0.000	0.001679	0.001876
64-BB26	1.130	0.000	0.000	0.003045	0.003401
64-BB27	0.229	0.000	0.000	0.000618	0.000690
64-BBB05	0.624	0.000	0.000	0.001544	0.001716
64-BBB07	0.659	0.000	0.000	0.001630	0.001811
64-BBB09	1.101	0.624	0.000	0.031467	0.034963
64-BBB10	1.461	0.239	0.000	0.014632	0.016258
64-BBB11	0.289	0.000	0.000	0.000715	0.000795
64-BBB12	0.573	0.000	0.000	0.001418	0.001575
64-BBB18	0.410	0.000	0.000	0.001013	0.001126
64-BBB19	0.514	0.000	0.000	0.001272	0.001413
64-BBB26	0.632	0.000	0.000	0.001176	0.001220
64-BBB28	0.422	0.000	0.000	0.000785	0.000814
64-BBB29	0.911	0.000	0.000	0.001696	0.001759
64-C24	0.251	0.000	0.000	0.000678	0.000757
64-CC11	0.517	0.000	0.000	0.001279	0.001421
64-CC12	0.600	0.000	0.000	0.001485	0.001650

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-CC13	1.257	0.000	0.000	0.003109	0.003455
64-CC16	0.258	0.000	0.000	0.000638	0.000709
64-CC17	0.395	0.000	0.000	0.000976	0.001085
64-CC18	0.638	0.000	0.000	0.001579	0.001754
64-CC19	0.094	0.000	0.000	0.000232	0.000258
64-CC20	0.665	0.000	0.000	0.001644	0.001827
64-CC21	0.660	0.000	0.000	0.001779	0.001988
64-CC24	0.623	0.000	0.000	0.001679	0.001876
64-CC26	0.930	0.000	0.000	0.002506	0.002799
64-CC27	0.497	0.000	0.000	0.001340	0.001497
64-CCC04	0.241	0.000	0.000	0.000597	0.000663
64-CCC05	0.204	0.000	0.000	0.000505	0.000561
64-CCC07	0.659	0.000	0.000	0.001631	0.001812
64-CCC08	0.237	0.000	0.000	0.000587	0.000653
64-CCC09	0.768	0.000	0.000	0.001900	0.002111
64-CCC10	2.121	0.653	0.000	0.035333	0.039258
64-CCC11	2.599	0.214	0.000	0.016271	0.018079
64-CCC12	0.550	0.000	0.000	0.001361	0.001512
64-CCC13	0.430	0.000	0.000	0.001063	0.001182
64-CCC16	0.424	0.000	0.000	0.001049	0.001165
64-CCC19	0.325	0.000	0.000	0.000803	0.000892
64-CCC20	0.596	0.000	0.000	0.001462	0.001622
64-CCC23	0.145	0.000	0.000	0.000269	0.000279
64-CCC24	0.744	0.000	0.000	0.001385	0.001437
64-CCC25	0.621	0.000	0.000	0.001157	0.001199
64-CCC26	1.255	0.000	0.000	0.002336	0.002422
64-CCC27	1.096	0.000	0.000	0.002040	0.002115
64-CCC28	1.368	0.000	0.000	0.002546	0.002640
64-CCC29	0.863	0.000	0.000	0.001606	0.001665
64-D23	0.621	0.000	0.000	0.001672	0.001868
64-D24	0.544	0.000	0.000	0.001465	0.001636
64-D36	0.574	0.000	0.000	0.001546	0.001727
64-D37	0.353	0.000	0.000	0.000951	0.001063
64-DD12	1.278	0.000	0.000	0.003162	0.003513
64-DD17	0.658	0.000	0.000	0.001627	0.001808
64-DD18	0.642	0.000	0.000	0.001589	0.001765
64-DD19	0.759	0.000	0.000	0.001876	0.002085
64-DD21	0.349	0.000	0.000	0.000941	0.001051
64-DD22	0.315	0.000	0.000	0.000850	0.000950
64-DD23	0.406	0.000	0.000	0.001094	0.001222
64-DD24	0.217	0.000	0.000	0.000585	0.000654
64-DD26	0.317	0.000	0.000	0.000855	0.000955
64-DDD05	0.708	0.000	0.000	0.001751	0.001946
64-DDD06	0.309	0.000	0.000	0.000763	0.000848
64-DDD07	0.863	0.000	0.000	0.002134	0.002371
64-DDD08	0.853	0.000	0.000	0.002111	0.002345
64-DDD10	0.200	0.000	0.000	0.000494	0.000549
64-DDD11	4.573	0.933	0.000	0.054276	0.060307

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-DDD12	1.229	0.254	0.000	0.014738	0.016376
64-DDD13	1.094	0.000	0.000	0.002706	0.003006
64-DDD14	0.859	0.000	0.000	0.002124	0.002360
64-DDD15	0.721	0.000	0.000	0.001783	0.001981
64-DDD16	0.723	0.000	0.000	0.001789	0.001988
64-DDD20	0.369	0.000	0.000	0.000765	0.000817
64-DDD21	0.686	0.000	0.000	0.001277	0.001324
64-DDD22	0.186	0.000	0.000	0.000347	0.000360
64-DDD23	0.707	0.000	0.000	0.001316	0.001365
64-DDD25	0.576	0.000	0.000	0.001072	0.001112
64-DDD26	1.163	0.000	0.000	0.002166	0.002246
64-DDD27	1.154	0.000	0.000	0.002148	0.002227
64-DDD28	1.161	0.000	0.000	0.002162	0.002242
64-DDD29	0.764	0.000	0.000	0.001422	0.001475
64-E22	0.318	0.000	0.000	0.000856	0.000956
64-E23	0.446	0.000	0.000	0.001201	0.001342
64-E37	0.738	0.000	0.000	0.001988	0.002221
64-EE17	0.670	0.000	0.000	0.001657	0.001841
64-EE18	1.168	0.000	0.000	0.002889	0.003210
64-EE19	0.231	0.000	0.000	0.000571	0.000635
64-EE22	0.645	0.000	0.000	0.001739	0.001943
64-EE23	0.640	0.000	0.000	0.001724	0.001926
64-EEE06	0.642	0.000	0.000	0.001588	0.001764
64-EEE07	0.768	0.000	0.000	0.001899	0.002110
64-EEE08	0.641	0.000	0.000	0.001586	0.001762
64-EEE10	0.752	0.000	0.000	0.001860	0.002066
64-EEE11	0.163	0.000	0.000	0.000403	0.000448
64-EEE12	2.658	1.530	0.000	0.077055	0.085617
64-EEE13	2.239	0.219	0.000	0.015632	0.017369
64-EEE14	0.921	0.000	0.000	0.002279	0.002532
64-EEE15	0.756	0.000	0.000	0.001869	0.002076
64-EEE16	1.248	0.000	0.000	0.003087	0.003430
64-EEE17	0.231	0.000	0.000	0.000572	0.000636
64-EEE21	0.222	0.000	0.000	0.000413	0.000428
64-EEE22	2.145	0.000	0.000	0.003992	0.004140
64-EEE23	0.196	0.000	0.000	0.000365	0.000378
64-EEE28	0.272	0.000	0.000	0.000507	0.000526
64-EEE29	0.716	0.000	0.000	0.001332	0.001381
64-F21	0.706	0.000	0.000	0.001902	0.002125
64-F22	0.768	0.000	0.000	0.002069	0.002312
64-F26	0.215	0.000	0.000	0.000579	0.000647
64-F27	0.394	0.000	0.000	0.001063	0.001187
64-F28	0.195	0.000	0.000	0.000525	0.000586
64-F29	0.440	0.000	0.000	0.001185	0.001324
64-F37	0.220	0.000	0.000	0.000593	0.000662
64-F38	1.050	0.000	0.000	0.002829	0.003161
64-FF16	0.137	0.000	0.000	0.000340	0.000377
64-FF17	1.132	0.000	0.000	0.002801	0.003112

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-FF18	0.996	0.000	0.000	0.002464	0.002738
64-FF22	0.661	0.000	0.000	0.001782	0.001991
64-FF23	0.676	0.000	0.000	0.001822	0.002035
64-FF30	0.541	0.000	0.000	0.001456	0.001627
64-FF31	0.656	0.000	0.000	0.001767	0.001974
64-FF32	0.625	0.000	0.000	0.001685	0.001883
64-FF33	0.337	0.000	0.000	0.000909	0.001015
64-FFF07	0.336	0.000	0.000	0.000831	0.000924
64-FFF08	1.104	0.000	0.000	0.002731	0.003034
64-FFF09	0.710	0.000	0.000	0.001757	0.001953
64-FFF10	0.310	0.000	0.000	0.000767	0.000852
64-FFF12	0.387	0.000	0.000	0.000957	0.001064
64-FFF13	0.876	1.562	0.000	0.074139	0.082377
64-FFF14	1.327	0.172	0.000	0.011189	0.012432
64-FFF16	0.621	0.000	0.000	0.001537	0.001708
64-FFF17	0.300	0.000	0.000	0.000742	0.000825
64-FFF21	0.841	0.000	0.000	0.001565	0.001623
64-FFF22	0.076	0.000	0.000	0.000141	0.000146
64-FFF23	1.520	0.000	0.000	0.002830	0.002935
64-FFF24	0.322	0.000	0.000	0.000600	0.000622
64-FFF27	0.582	0.000	0.000	0.001084	0.001124
64-FFF28	0.542	0.000	0.000	0.001009	0.001046
64-FFF29	0.624	0.000	0.000	0.001161	0.001204
64-G22	0.164	0.000	0.000	0.000441	0.000493
64-G25	0.287	0.000	0.000	0.000772	0.000863
64-G26	0.475	0.000	0.000	0.001280	0.001430
64-G27	0.960	0.000	0.000	0.002586	0.002889
64-G28	1.398	0.000	0.000	0.003765	0.004207
64-G29	1.425	0.000	0.000	0.003838	0.004288
64-G33	0.007	0.000	0.000	0.000019	0.000022
64-G37	0.147	0.000	0.000	0.000397	0.000443
64-G38	0.855	0.000	0.000	0.002304	0.002574
64-GG01	0.529	0.000	0.000	0.001309	0.001454
64-GG02	0.117	0.000	0.000	0.000289	0.000321
64-GG14	0.391	0.000	0.000	0.000967	0.001074
64-GG15	0.673	0.000	0.000	0.001664	0.001848
64-GG16	0.538	0.000	0.000	0.001331	0.001479
64-GG17	1.251	0.000	0.000	0.003093	0.003437
64-GG22	0.058	0.000	0.000	0.000156	0.000175
64-GG23	0.054	0.000	0.000	0.000146	0.000163
64-GG28	0.661	0.000	0.000	0.001231	0.001276
64-GG29	0.715	0.000	0.000	0.001330	0.001379
64-GG30	0.140	0.000	0.000	0.000321	0.000348
64-GGG08	0.253	0.000	0.000	0.000625	0.000694
64-GGG09	1.375	0.000	0.000	0.003402	0.003780
64-GGG10	0.074	0.000	0.000	0.000183	0.000203
64-GGG13	0.483	0.000	0.000	0.001195	0.001328
64-GGG14	1.258	1.610	0.000	0.077284	0.085871

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-GGG15	1.088	0.124	0.000	0.008399	0.009332
64-GGG16	0.621	0.000	0.000	0.001537	0.001708
64-GGG20	1.258	0.000	0.000	0.002508	0.002651
64-GGG21	0.052	0.000	0.000	0.000098	0.000101
64-GGG23	0.002	0.000	0.000	0.000004	0.000004
64-GGG24	1.384	0.000	0.000	0.002576	0.002672
64-GGG25	0.470	0.000	0.000	0.000874	0.000907
64-GGG26	0.403	0.000	0.000	0.000751	0.000779
64-GGG27	0.207	0.000	0.000	0.000386	0.000401
64-GGG28	0.310	0.000	0.000	0.000578	0.000599
64-GGG29	0.313	0.000	0.000	0.000583	0.000605
64-H18	0.135	0.000	0.000	0.000334	0.000371
64-H19	0.462	0.000	0.000	0.001143	0.001270
64-H20	0.285	0.000	0.000	0.000704	0.000782
64-H29	0.573	0.000	0.000	0.001544	0.001725
64-H31	0.566	0.000	0.000	0.001524	0.001703
64-H32	0.105	0.000	0.000	0.000282	0.000315
64-H33	0.316	0.000	0.000	0.000853	0.000953
64-H37	0.919	0.000	0.000	0.002477	0.002767
64-H38	0.514	0.000	0.000	0.001386	0.001549
64-HH01	0.022	0.000	0.000	0.000055	0.000061
64-HH02	2.136	0.000	0.000	0.005284	0.005871
64-HH03	0.821	0.000	0.000	0.002031	0.002257
64-HH12	0.500	0.000	0.000	0.001236	0.001373
64-HH13	0.678	0.000	0.000	0.001678	0.001865
64-HH14	0.286	0.000	0.000	0.000707	0.000785
64-HH16	0.567	0.000	0.000	0.001403	0.001559
64-HH17	0.869	0.000	0.000	0.002151	0.002390
64-HH27	0.870	0.000	0.000	0.001620	0.001680
64-HH28	0.005	0.000	0.000	0.000010	0.000010
64-HHH07	0.486	0.000	0.000	0.001202	0.001335
64-HHH08	0.786	0.000	0.000	0.001943	0.002159
64-HHH10	0.724	0.000	0.000	0.001791	0.001990
64-HHH11	0.271	0.000	0.000	0.000670	0.000744
64-HHH12	0.555	0.000	0.000	0.001373	0.001526
64-HHH13	0.193	0.000	0.000	0.000478	0.000531
64-HHH14	0.000	0.005	0.000	0.000247	0.000275
64-HHH15	0.995	1.629	0.000	0.077524	0.086137
64-HHH16	1.111	0.104	0.000	0.007538	0.008375
64-HHH18	0.408	0.000	0.000	0.001009	0.001121
64-HHH20	0.081	0.000	0.000	0.000201	0.000224
64-HHH25	1.197	0.000	0.000	0.002228	0.002310
64-HHH26	0.728	0.000	0.000	0.001354	0.001405
64-HHH28	0.307	0.000	0.000	0.000571	0.000592
64-HHH29	0.324	0.000	0.000	0.000602	0.000625
64-I18	0.927	0.000	0.000	0.002294	0.002549
64-I19	0.431	0.000	0.000	0.001065	0.001184
64-I20	0.569	0.000	0.000	0.001453	0.001618

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-I21	0.499	0.000	0.000	0.001345	0.001503
64-I28	0.008	0.000	0.000	0.000021	0.000024
64-I29	0.730	0.000	0.000	0.001967	0.002198
64-I31	0.091	0.000	0.000	0.000246	0.000274
64-I33	0.496	0.000	0.000	0.001335	0.001492
64-I34	0.572	0.000	0.000	0.001540	0.001721
64-I35	0.687	0.000	0.000	0.001850	0.002067
64-I36	1.245	0.000	0.000	0.003355	0.003748
64-I37	0.758	0.000	0.000	0.002042	0.002281
64-I38	0.007	0.000	0.000	0.000018	0.000020
64-II02	0.060	0.000	0.000	0.000150	0.000166
64-II03	1.650	0.000	0.000	0.004080	0.004534
64-II04	0.746	0.000	0.000	0.001845	0.002050
64-II05	0.487	0.000	0.000	0.001203	0.001337
64-II10	0.424	0.000	0.000	0.001050	0.001167
64-II11	0.705	0.000	0.000	0.001745	0.001938
64-II12	0.206	0.000	0.000	0.000510	0.000567
64-II15	0.355	0.000	0.000	0.000878	0.000976
64-II16	0.423	0.000	0.000	0.001046	0.001162
64-II17	0.640	0.000	0.000	0.001584	0.001760
64-II26	0.720	0.000	0.000	0.001340	0.001390
64-II27	0.051	0.000	0.000	0.000095	0.000098
64-II37	0.221	0.000	0.000	0.000411	0.000426
64-III06	0.487	0.000	0.000	0.001206	0.001340
64-III07	1.838	0.000	0.000	0.004547	0.005052
64-III08	0.416	0.000	0.000	0.001029	0.001144
64-III11	0.958	0.000	0.000	0.002369	0.002632
64-III12	0.894	0.000	0.000	0.002213	0.002458
64-III15	0.000	0.029	0.000	0.001316	0.001462
64-III16	1.163	1.632	0.000	0.078070	0.086744
64-III17	0.691	0.069	0.000	0.004908	0.005454
64-III18	0.856	0.000	0.000	0.002117	0.002353
64-III19	0.449	0.000	0.000	0.001110	0.001233
64-III26	0.184	0.000	0.000	0.000342	0.000355
64-III29	0.635	0.000	0.000	0.001182	0.001226
64-J17	1.030	0.000	0.000	0.002548	0.002831
64-J18	0.376	0.000	0.000	0.000931	0.001034
64-J28	0.570	0.000	0.000	0.001535	0.001715
64-J31	0.036	0.000	0.000	0.000098	0.000109
64-J32	0.808	0.000	0.000	0.002178	0.002433
64-J33	0.299	0.000	0.000	0.000805	0.000899
64-J34	1.602	0.000	0.000	0.004317	0.004823
64-J35	0.155	0.000	0.000	0.000418	0.000467
64-J36	0.132	0.000	0.000	0.000356	0.000398
64-JJ03	0.114	0.000	0.000	0.000281	0.000312
64-JJ04	1.499	0.000	0.000	0.003707	0.004118
64-JJ05	0.689	0.000	0.000	0.001704	0.001893
64-JJ07	0.455	0.000	0.000	0.001127	0.001252

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
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NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-JJ08	0.512	0.000	0.000	0.001267	0.001408
64-JJ09	0.708	0.000	0.000	0.001752	0.001947
64-JJ10	0.267	0.000	0.000	0.000660	0.000734
64-JJ14	0.074	0.000	0.000	0.000184	0.000204
64-JJ15	0.696	0.000	0.000	0.001721	0.001912
64-JJ16	0.266	0.000	0.000	0.000659	0.000732
64-JJ17	0.379	0.000	0.000	0.000937	0.001041
64-JJ25	0.162	0.000	0.000	0.000302	0.000314
64-JJ26	0.515	0.000	0.000	0.000958	0.000994
64-JJ36	0.741	0.000	0.000	0.001379	0.001430
64-JJ37	0.108	0.000	0.000	0.000202	0.000209
64-JJJ05	0.196	0.000	0.000	0.000485	0.000539
64-JJJ06	0.629	0.000	0.000	0.001557	0.001730
64-JJJ07	2.981	0.000	0.000	0.007373	0.008192
64-JJJ08	0.673	0.000	0.000	0.001665	0.001850
64-JJJ09	0.171	0.000	0.000	0.000423	0.000470
64-JJJ10	0.225	0.000	0.000	0.000557	0.000619
64-JJJ11	0.921	0.000	0.000	0.002279	0.002532
64-JJJ12	0.308	0.000	0.000	0.000762	0.000846
64-JJJ13	0.726	0.000	0.000	0.001796	0.001996
64-JJJ16	0.000	0.049	0.000	0.002254	0.002504
64-JJJ17	2.533	1.662	0.000	0.082826	0.092029
64-JJJ18	1.086	0.033	0.000	0.004191	0.004657
64-JJJ29	0.710	0.000	0.000	0.001321	0.001370
64-K17	1.008	0.000	0.000	0.002494	0.002771
64-K28	0.115	0.000	0.000	0.000311	0.000347
64-K32	0.547	0.000	0.000	0.001474	0.001647
64-K33	1.485	0.000	0.000	0.004001	0.004470
64-K34	0.103	0.000	0.000	0.000277	0.000310
64-KK04	0.774	0.000	0.000	0.001914	0.002126
64-KK05	0.714	0.000	0.000	0.001767	0.001964
64-KK06	1.366	0.000	0.000	0.003379	0.003755
64-KK07	1.251	0.000	0.000	0.003094	0.003438
64-KK08	0.412	0.000	0.000	0.001020	0.001133
64-KK14	0.767	0.000	0.000	0.001897	0.002108
64-KK16	0.639	0.000	0.000	0.001581	0.001757
64-KK25	0.666	0.000	0.000	0.001240	0.001286
64-KK35	0.659	0.000	0.000	0.001227	0.001272
64-KK36	0.211	0.000	0.000	0.000393	0.000407
64-KKK05	1.126	0.000	0.000	0.002786	0.003095
64-KKK07	2.548	0.000	0.000	0.006303	0.007003
64-KKK09	0.591	0.000	0.000	0.001462	0.001625
64-KKK10	0.579	0.000	0.000	0.001433	0.001593
64-KKK12	0.208	0.000	0.000	0.000515	0.000572
64-KKK13	0.689	0.000	0.000	0.001705	0.001894
64-KKK14	0.799	0.000	0.000	0.001976	0.002196
64-KKK15	0.320	0.000	0.000	0.000790	0.000878
64-KKK16	1.337	0.000	0.000	0.003307	0.003675

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
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Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-KKK17	1.467	0.061	0.000	0.006419	0.007132
64-KKK18	1.183	1.661	0.000	0.079452	0.088280
64-KKK19	0.590	0.000	0.000	0.001458	0.001620
64-KKK29	0.252	0.000	0.000	0.000469	0.000487
64-KKK30	0.458	0.000	0.000	0.000853	0.000884
64-L16	0.280	0.000	0.000	0.000692	0.000768
64-L17	0.880	0.000	0.000	0.002176	0.002418
64-L23	0.257	0.000	0.000	0.000693	0.000775
64-L28	1.386	0.000	0.000	0.003733	0.004170
64-L31	0.804	0.000	0.000	0.002166	0.002420
64-L32	1.420	0.000	0.000	0.003827	0.004275
64-LL03	0.000	0.000	0.000	0.000000	0.000001
64-LL04	1.143	0.000	0.000	0.002828	0.003142
64-LL05	1.857	0.000	0.000	0.004595	0.005105
64-LL06	1.503	0.000	0.000	0.003717	0.004130
64-LL13	0.540	0.000	0.000	0.001336	0.001484
64-LL14	0.223	0.000	0.000	0.000552	0.000614
64-LL16	0.642	0.000	0.000	0.001589	0.001765
64-LL25	0.677	0.000	0.000	0.001260	0.001306
64-LL34	0.754	0.000	0.000	0.001404	0.001456
64-LL35	0.305	0.000	0.000	0.000568	0.000589
64-LLL04	1.359	0.000	0.000	0.003361	0.003734
64-LLL05	1.045	0.000	0.000	0.002584	0.002871
64-LLL06	0.616	0.000	0.000	0.001525	0.001694
64-LLL07	1.808	0.000	0.000	0.004473	0.004970
64-LLL08	0.744	0.000	0.000	0.001839	0.002044
64-LLL12	0.629	0.000	0.000	0.001557	0.001730
64-LLL13	0.027	0.000	0.000	0.000066	0.000073
64-LLL14	0.830	0.000	0.000	0.002053	0.002281
64-LLL15	1.292	0.000	0.000	0.003196	0.003551
64-LLL16	0.949	0.000	0.000	0.002348	0.002609
64-LLL18	0.637	0.103	0.000	0.006337	0.007041
64-LLL19	1.202	1.617	0.000	0.077464	0.086071
64-LLL20	0.528	0.000	0.000	0.001306	0.001451
64-LLL30	0.912	0.000	0.000	0.001697	0.001760
64-M16	1.307	0.000	0.000	0.003233	0.003593
64-M17	0.110	0.000	0.000	0.000273	0.000304
64-M23	0.650	0.000	0.000	0.001752	0.001958
64-M24	1.200	0.000	0.000	0.003233	0.003612
64-M25	0.974	0.000	0.000	0.002624	0.002932
64-M26	0.558	0.000	0.000	0.001503	0.001680
64-M27	0.719	0.000	0.000	0.001937	0.002164
64-M28	1.684	0.000	0.000	0.004538	0.005070
64-M29	1.069	0.000	0.000	0.002880	0.003218
64-M30	2.352	0.000	0.000	0.006337	0.007080
64-M31	1.346	0.000	0.000	0.003626	0.004051
64-MM04	0.638	0.000	0.000	0.001577	0.001752
64-MM05	0.951	0.000	0.000	0.002353	0.002615

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
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Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-MM06	0.679	0.000	0.000	0.001680	0.001867
64-MM12	0.224	0.000	0.000	0.000554	0.000616
64-MM13	0.536	0.000	0.000	0.001325	0.001473
64-MM16	0.645	0.000	0.000	0.001595	0.001772
64-MM25	0.448	0.000	0.000	0.000834	0.000864
64-MM26	0.266	0.000	0.000	0.000494	0.000513
64-MM33	0.300	0.000	0.000	0.000558	0.000579
64-MM34	0.514	0.000	0.000	0.000956	0.000992
64-MM35	0.617	0.000	0.000	0.001149	0.001191
64-MM36	0.647	0.000	0.000	0.001205	0.001249
64-MMM04	0.044	0.000	0.000	0.000109	0.000121
64-MMM05	2.251	0.000	0.000	0.005569	0.006188
64-MMM06	0.978	0.000	0.000	0.002419	0.002688
64-MMM07	0.625	0.000	0.000	0.001545	0.001717
64-MMM12	0.225	0.000	0.000	0.000556	0.000618
64-MMM13	1.460	0.000	0.000	0.003611	0.004012
64-MMM14	2.073	0.000	0.000	0.005128	0.005698
64-MMM15	1.814	0.000	0.000	0.004486	0.004985
64-MMM16	1.489	0.000	0.000	0.003683	0.004093
64-MMM17	0.445	0.000	0.000	0.001101	0.001223
64-MMM18	0.655	0.000	0.000	0.001619	0.001799
64-MMM19	0.000	0.183	0.000	0.008407	0.009341
64-MMM20	1.673	1.422	0.000	0.083606	0.090986
64-MMM21	0.483	0.000	0.000	0.000898	0.000932
64-MMM30	0.348	0.000	0.000	0.000647	0.000671
64-N16	1.429	0.000	0.000	0.003535	0.003928
64-N20	0.002	0.000	0.000	0.000005	0.000006
64-N22	0.954	0.000	0.000	0.002569	0.002871
64-N23	1.007	0.000	0.000	0.002713	0.003032
64-N24	1.007	0.000	0.000	0.002713	0.003031
64-N25	0.765	0.000	0.000	0.002062	0.002304
64-N26	1.156	0.000	0.000	0.003115	0.003480
64-N27	1.963	0.000	0.000	0.005289	0.005909
64-N28	0.869	0.000	0.000	0.002341	0.002615
64-N29	0.206	0.000	0.000	0.000554	0.000619
64-N30	0.870	0.000	0.000	0.002344	0.002619
64-N31	0.020	0.000	0.000	0.000054	0.000060
64-NN04	0.672	0.000	0.000	0.001663	0.001848
64-NN05	0.537	0.000	0.000	0.001329	0.001476
64-NN06	0.246	0.000	0.000	0.000608	0.000676
64-NN07	0.669	0.000	0.000	0.001656	0.001840
64-NN08	0.385	0.000	0.000	0.000953	0.001059
64-NN11	0.838	0.000	0.000	0.002074	0.002304
64-NN12	0.878	0.000	0.000	0.002172	0.002413
64-NN16	0.632	0.000	0.000	0.001562	0.001736
64-NN26	0.673	0.000	0.000	0.001253	0.001300
64-NN32	0.090	0.000	0.000	0.000167	0.000173
64-NN33	0.702	0.000	0.000	0.001307	0.001355

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
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64-NNN05	1.246	0.000	0.000	0.003082	0.003425
64-NNN06	1.153	0.000	0.000	0.002851	0.003168
64-NNN07	0.304	0.000	0.000	0.000751	0.000834
64-NNN13	0.777	0.000	0.000	0.001922	0.002136
64-NNN14	1.775	0.000	0.000	0.004390	0.004878
64-NNN15	1.260	0.000	0.000	0.003118	0.003464
64-NNN16	1.755	0.000	0.000	0.004342	0.004824
64-NNN17	0.983	0.000	0.000	0.002432	0.002702
64-NNN18	1.622	0.000	0.000	0.004012	0.004458
64-NNN19	0.496	0.000	0.000	0.001226	0.001362
64-NNN20	1.121	0.255	0.000	0.025435	0.026464
64-NNN21	3.758	1.380	0.000	0.131847	0.136730
64-NNN22	0.496	0.000	0.000	0.000922	0.000957
64-O16	0.956	0.000	0.000	0.002366	0.002628
64-O17	0.655	0.000	0.000	0.001621	0.001801
64-O20	0.795	0.000	0.000	0.001967	0.002185
64-O22	0.719	0.000	0.000	0.001938	0.002165
64-O23	0.568	0.000	0.000	0.001530	0.001709
64-O24	0.926	0.000	0.000	0.002494	0.002786
64-O25	1.665	0.000	0.000	0.004484	0.005010
64-O26	0.789	0.000	0.000	0.002124	0.002373
64-O30	0.774	0.000	0.000	0.002084	0.002329
64-O31	0.846	0.000	0.000	0.002279	0.002546
64-OO05	0.236	0.000	0.000	0.000585	0.000650
64-OO06	0.509	0.000	0.000	0.001259	0.001399
64-OO07	0.432	0.000	0.000	0.001068	0.001186
64-OO08	0.855	0.000	0.000	0.002114	0.002349
64-OO09	0.168	0.000	0.000	0.000416	0.000462
64-OO10	0.517	0.000	0.000	0.001280	0.001422
64-OO11	0.271	0.000	0.000	0.000671	0.000746
64-OO12	0.852	0.000	0.000	0.002108	0.002342
64-OO15	0.582	0.000	0.000	0.001439	0.001599
64-OO16	0.053	0.000	0.000	0.000131	0.000146
64-OO26	0.322	0.000	0.000	0.000599	0.000621
64-OO27	0.670	0.000	0.000	0.001247	0.001294
64-OO28	0.653	0.000	0.000	0.001216	0.001261
64-OO29	0.140	0.000	0.000	0.000261	0.000271
64-OO30	1.092	0.000	0.000	0.002033	0.002108
64-OO32	0.793	0.000	0.000	0.001477	0.001532
64-OOO05	0.763	0.000	0.000	0.001887	0.002097
64-OOO06	0.640	0.000	0.000	0.001583	0.001759
64-OOO14	1.887	0.000	0.000	0.004666	0.005185
64-OOO15	3.533	0.000	0.000	0.008738	0.009709
64-OOO16	1.117	0.000	0.000	0.002762	0.003069
64-OOO17	1.142	0.000	0.000	0.002824	0.003138
64-OOO18	1.300	0.000	0.000	0.003215	0.003573
64-OOO19	2.781	0.000	0.000	0.006879	0.007643
64-OOO20	0.963	0.000	0.000	0.002066	0.002225

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64-OOO21	1.093	0.327	0.000	0.031578	0.032748
64-OOO22	2.868	1.013	0.000	0.096939	0.100529
64-OOO23	0.246	0.000	0.000	0.000457	0.000474
64-P17	0.823	0.000	0.000	0.002036	0.002263
64-P19	0.595	0.000	0.000	0.001471	0.001635
64-P20	1.246	0.000	0.000	0.003118	0.003467
64-P21	1.161	0.000	0.000	0.003127	0.003494
64-P22	1.018	0.000	0.000	0.002743	0.003064
64-P23	0.081	0.000	0.000	0.000220	0.000245
64-P24	0.731	0.000	0.000	0.001968	0.002199
64-P25	1.068	0.000	0.000	0.002879	0.003216
64-P29	0.095	0.000	0.000	0.000257	0.000287
64-P30	0.709	0.000	0.000	0.001909	0.002133
64-P31	0.399	0.000	0.000	0.001075	0.001201
64-P32	0.738	0.000	0.000	0.001988	0.002222
64-P33	0.155	0.000	0.000	0.000418	0.000467
64-P34	0.383	0.000	0.000	0.001032	0.001153
64-P35	0.068	0.000	0.000	0.000183	0.000204
64-PP06	0.655	0.000	0.000	0.001619	0.001799
64-PP08	0.744	0.000	0.000	0.001840	0.002044
64-PP09	0.973	0.000	0.000	0.002406	0.002674
64-PP10	0.468	0.000	0.000	0.001159	0.001287
64-PP12	0.748	0.000	0.000	0.001851	0.002057
64-PP15	0.651	0.000	0.000	0.001610	0.001788
64-PP18	0.218	0.000	0.000	0.000540	0.000599
64-PP19	0.622	0.000	0.000	0.001539	0.001710
64-PP20	0.429	0.000	0.000	0.001060	0.001178
64-PP29	0.808	0.000	0.000	0.001505	0.001560
64-PP30	1.170	0.000	0.000	0.002177	0.002258
64-PP31	0.686	0.000	0.000	0.001276	0.001323
64-PP32	0.116	0.000	0.000	0.000216	0.000224
64-PPP05	0.661	0.000	0.000	0.001635	0.001816
64-PPP06	0.634	0.000	0.000	0.001569	0.001743
64-PPP13	0.705	0.000	0.000	0.001744	0.001937
64-PPP14	3.150	0.000	0.000	0.007791	0.008657
64-PPP15	2.386	0.000	0.000	0.005903	0.006559
64-PPP16	1.589	0.000	0.000	0.003931	0.004368
64-PPP17	0.087	0.000	0.000	0.000216	0.000240
64-PPP18	1.288	0.000	0.000	0.003185	0.003539
64-PPP19	1.614	0.000	0.000	0.003992	0.004436
64-PPP20	2.165	0.000	0.000	0.004899	0.005340
64-PPP21	0.535	0.000	0.000	0.000996	0.001033
64-PPP22	0.134	0.134	0.000	0.012333	0.012790
64-PPP23	2.273	0.733	0.000	0.070557	0.073170
64-PPP24	0.194	0.000	0.000	0.000361	0.000374
64-PPP29	0.382	0.000	0.000	0.000712	0.000738
64-PPP30	0.048	0.000	0.000	0.000089	0.000092
64-Q17	0.360	0.000	0.000	0.000891	0.000990

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-Q18	1.015	0.000	0.000	0.002511	0.002790
64-Q19	1.351	0.000	0.000	0.003343	0.003714
64-Q20	0.720	0.000	0.000	0.001827	0.002034
64-Q21	0.453	0.000	0.000	0.001220	0.001363
64-Q22	0.913	0.000	0.000	0.002461	0.002749
64-Q23	0.728	0.000	0.000	0.001961	0.002191
64-Q24	0.000	0.000	0.000	0.000001	0.000001
64-Q25	0.629	0.000	0.000	0.001694	0.001893
64-Q29	1.359	0.000	0.000	0.003661	0.004090
64-Q30	0.661	0.000	0.000	0.001780	0.001988
64-Q31	0.636	0.000	0.000	0.001714	0.001915
64-Q32	0.645	0.000	0.000	0.001737	0.001941
64-Q33	1.141	0.000	0.000	0.003074	0.003435
64-Q34	0.410	0.000	0.000	0.001105	0.001235
64-QQ06	0.419	0.000	0.000	0.001037	0.001152
64-QQ07	0.305	0.000	0.000	0.000754	0.000838
64-QQ08	0.437	0.000	0.000	0.001082	0.001202
64-QQ09	1.862	0.000	0.000	0.004607	0.005118
64-QQ10	0.622	0.000	0.000	0.001538	0.001709
64-QQ11	0.913	0.000	0.000	0.002258	0.002509
64-QQ12	0.874	0.000	0.000	0.002161	0.002401
64-QQ13	0.629	0.000	0.000	0.001557	0.001730
64-QQ14	1.084	0.000	0.000	0.002682	0.002980
64-QQ15	1.304	0.000	0.000	0.003225	0.003584
64-QQ16	0.624	0.000	0.000	0.001545	0.001716
64-QQ17	0.628	0.000	0.000	0.001552	0.001725
64-QQ18	0.414	0.000	0.000	0.001023	0.001137
64-QQ29	0.333	0.000	0.000	0.000620	0.000643
64-QQ30	1.230	0.000	0.000	0.002290	0.002374
64-QQ31	0.322	0.000	0.000	0.000600	0.000622
64-QQQ05	0.169	0.000	0.000	0.000419	0.000466
64-QQQ06	0.944	0.000	0.000	0.002334	0.002594
64-QQQ07	0.748	0.000	0.000	0.001851	0.002056
64-QQQ09	0.700	0.000	0.000	0.001731	0.001923
64-QQQ10	0.029	0.000	0.000	0.000072	0.000080
64-QQQ13	1.331	0.000	0.000	0.003293	0.003659
64-QQQ14	2.914	0.000	0.000	0.007209	0.008010
64-QQQ15	1.322	0.000	0.000	0.003271	0.003635
64-QQQ16	2.875	0.000	0.000	0.007113	0.007903
64-QQQ17	1.364	0.000	0.000	0.003373	0.003748
64-QQQ18	0.631	0.000	0.000	0.001561	0.001735
64-QQQ19	0.623	0.000	0.000	0.001541	0.001712
64-QQQ20	0.623	0.000	0.000	0.001417	0.001547
64-QQQ21	1.629	0.000	0.000	0.003032	0.003144
64-QQQ22	0.881	0.000	0.000	0.001640	0.001700
64-QQQ23	0.158	0.158	0.000	0.014568	0.015108
64-QQQ24	2.288	0.709	0.000	0.068401	0.070934
64-QQQ25	0.167	0.000	0.000	0.000310	0.000321

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-QQQ28	0.869	0.000	0.000	0.001618	0.001678
64-QQQ29	0.310	0.000	0.000	0.000578	0.000599
64-R17	0.038	0.000	0.000	0.000094	0.000104
64-R18	1.433	0.000	0.000	0.003545	0.003939
64-R19	2.411	0.000	0.000	0.005965	0.006628
64-R20	0.878	0.000	0.000	0.002208	0.002456
64-R21	2.197	0.000	0.000	0.005919	0.006613
64-R22	0.941	0.000	0.000	0.002534	0.002831
64-R23	0.623	0.000	0.000	0.001678	0.001875
64-R24	0.623	0.000	0.000	0.001678	0.001875
64-R25	1.683	0.000	0.000	0.004534	0.005065
64-R26	0.630	0.000	0.000	0.001698	0.001897
64-R27	0.685	0.000	0.000	0.001845	0.002061
64-R28	1.531	0.000	0.000	0.004124	0.004607
64-R29	0.403	0.000	0.000	0.001085	0.001212
64-RR07	1.930	0.000	0.000	0.004773	0.005303
64-RR08	0.392	0.000	0.000	0.000970	0.001078
64-RR09	0.417	0.000	0.000	0.001032	0.001147
64-RR10	0.328	0.000	0.000	0.000812	0.000902
64-RR14	0.917	0.000	0.000	0.002267	0.002519
64-RR15	0.097	0.000	0.000	0.000240	0.000266
64-RR29	0.663	0.000	0.000	0.001233	0.001279
64-RR30	0.637	0.000	0.000	0.001185	0.001229
64-RRR06	1.165	0.000	0.000	0.002882	0.003202
64-RRR07	0.456	0.000	0.000	0.001129	0.001254
64-RRR08	0.417	0.000	0.000	0.001032	0.001147
64-RRR09	0.090	0.000	0.000	0.000223	0.000248
64-RRR10	0.729	0.000	0.000	0.001803	0.002003
64-RRR11	0.682	0.000	0.000	0.001686	0.001873
64-RRR13	0.140	0.000	0.000	0.000347	0.000385
64-RRR14	1.820	0.000	0.000	0.004502	0.005002
64-RRR15	0.833	0.000	0.000	0.002062	0.002291
64-RRR16	0.303	0.000	0.000	0.000751	0.000834
64-RRR17	0.893	0.000	0.000	0.002209	0.002454
64-RRR22	0.632	0.000	0.000	0.001177	0.001221
64-RRR24	0.284	0.182	0.000	0.016968	0.017596
64-RRR25	2.482	0.645	0.000	0.062931	0.065262
64-RRR26	0.126	0.000	0.000	0.000235	0.000243
64-RRR27	0.845	0.000	0.000	0.001572	0.001630
64-RRR28	0.817	0.000	0.000	0.001521	0.001578
64-S18	0.104	0.000	0.000	0.000257	0.000286
64-S19	0.864	0.000	0.000	0.002137	0.002374
64-S21	0.059	0.000	0.000	0.000160	0.000178
64-S25	0.632	0.000	0.000	0.001704	0.001903
64-S26	0.412	0.000	0.000	0.001109	0.001239
64-S27	0.673	0.000	0.000	0.001813	0.002026
64-SS06	0.239	0.000	0.000	0.000592	0.000658
64-SS07	0.711	0.000	0.000	0.001759	0.001954

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-SS08	0.755	0.000	0.000	0.001869	0.002076
64-SS09	0.524	0.000	0.000	0.001297	0.001441
64-SS10	1.349	0.000	0.000	0.003337	0.003708
64-SS14	0.684	0.000	0.000	0.001691	0.001879
64-SS29	0.663	0.000	0.000	0.001233	0.001279
64-SS30	0.629	0.000	0.000	0.001171	0.001214
64-SSS06	0.111	0.000	0.000	0.000275	0.000306
64-SSS07	0.715	0.000	0.000	0.001768	0.001965
64-SSS08	0.701	0.000	0.000	0.001734	0.001926
64-SSS09	0.072	0.000	0.000	0.000178	0.000198
64-SSS11	0.008	0.000	0.000	0.000021	0.000023
64-SSS12	0.711	0.000	0.000	0.001758	0.001953
64-SSS13	1.096	0.000	0.000	0.002711	0.003012
64-SSS14	0.840	0.000	0.000	0.002078	0.002309
64-SSS15	0.184	0.000	0.000	0.000455	0.000505
64-SSS16	0.663	0.000	0.000	0.001641	0.001823
64-SSS17	2.940	0.000	0.000	0.007272	0.008080
64-SSS18	3.332	0.000	0.000	0.008242	0.009158
64-SSS19	2.271	0.000	0.000	0.005619	0.006243
64-SSS20	1.246	0.000	0.000	0.002835	0.003094
64-SSS21	1.372	0.000	0.000	0.002554	0.002648
64-SSS22	2.102	0.000	0.000	0.003912	0.004057
64-SSS23	1.107	0.000	0.000	0.002060	0.002136
64-SSS24	1.177	0.000	0.000	0.002190	0.002271
64-SSS25	2.117	0.490	0.000	0.048267	0.050055
64-SSS26	4.317	0.199	0.000	0.026021	0.026984
64-SSS27	1.456	0.000	0.000	0.002710	0.002811
64-SSS28	1.282	0.000	0.000	0.002386	0.002475
64-SSS29	0.216	0.000	0.000	0.000402	0.000417
64-T19	0.855	0.000	0.000	0.002115	0.002350
64-T24	0.539	0.000	0.000	0.001452	0.001622
64-T25	0.450	0.000	0.000	0.001211	0.001353
64-T26	0.488	0.000	0.000	0.001314	0.001468
64-T33	0.300	0.000	0.000	0.000807	0.000902
64-TT07	0.094	0.000	0.000	0.000234	0.000260
64-TT08	2.411	0.000	0.000	0.005964	0.006627
64-TT09	3.249	0.000	0.000	0.008037	0.008930
64-TT10	1.756	0.000	0.000	0.004344	0.004827
64-TT11	1.453	0.000	0.000	0.003593	0.003992
64-TT12	1.590	0.000	0.000	0.003934	0.004371
64-TT13	0.506	0.000	0.000	0.001253	0.001392
64-TT14	0.116	0.000	0.000	0.000288	0.000320
64-TT28	0.591	0.000	0.000	0.001100	0.001141
64-TT29	0.750	0.000	0.000	0.001397	0.001449
64-TT30	0.625	0.000	0.000	0.001163	0.001206
64-TTT07	0.389	0.000	0.000	0.000963	0.001070
64-TTT08	0.577	0.000	0.000	0.001312	0.001432
64-TTT09	0.721	0.000	0.000	0.001783	0.001982

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
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NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-TTT10	0.562	0.000	0.000	0.001139	0.001209
64-TTT11	0.126	0.000	0.000	0.000234	0.000243
64-TTT12	0.621	0.000	0.000	0.001512	0.001674
64-TTT13	0.029	0.000	0.000	0.000071	0.000079
64-TTT16	1.439	0.000	0.000	0.003237	0.003525
64-TTT17	2.252	0.000	0.000	0.005324	0.005860
64-TTT18	1.430	0.000	0.000	0.003175	0.003446
64-TTT19	1.734	0.000	0.000	0.003743	0.004036
64-TTT20	2.177	0.000	0.000	0.004943	0.005393
64-TTT21	2.335	0.000	0.000	0.004347	0.004508
64-TTT22	1.569	0.000	0.000	0.002921	0.003029
64-TTT23	1.523	0.000	0.000	0.002835	0.002940
64-TTT26	3.820	0.681	0.000	0.068690	0.071235
64-TTT27	8.535	0.000	0.000	0.015886	0.016475
64-TTT28	2.402	0.000	0.000	0.004471	0.004637
64-U19	0.133	0.000	0.000	0.000329	0.000365
64-U20	0.579	0.000	0.000	0.001433	0.001593
64-U24	0.952	0.000	0.000	0.002565	0.002866
64-U25	0.544	0.000	0.000	0.001465	0.001637
64-U33	0.643	0.000	0.000	0.001731	0.001934
64-UU07	0.897	0.000	0.000	0.002219	0.002466
64-UU08	0.327	0.000	0.000	0.000809	0.000899
64-UU09	1.818	0.000	0.000	0.004496	0.004995
64-UU10	3.154	0.000	0.000	0.007802	0.008669
64-UU11	1.858	0.000	0.000	0.004596	0.005106
64-UU12	0.952	0.000	0.000	0.002354	0.002615
64-UU13	0.670	0.000	0.000	0.001656	0.001840
64-UU14	0.622	0.000	0.000	0.001540	0.001711
64-UU15	0.627	0.000	0.000	0.001552	0.001724
64-UU16	0.621	0.000	0.000	0.001537	0.001708
64-UU17	0.629	0.000	0.000	0.001556	0.001729
64-UU18	0.621	0.000	0.000	0.001537	0.001708
64-UU19	0.621	0.000	0.000	0.001537	0.001708
64-UU20	0.433	0.000	0.000	0.001070	0.001189
64-UU28	0.626	0.000	0.000	0.001165	0.001208
64-UU29	0.095	0.000	0.000	0.000176	0.000183
64-UU30	0.783	0.000	0.000	0.001458	0.001512
64-UUU08	0.310	0.000	0.000	0.000578	0.000599
64-UUU09	0.527	0.000	0.000	0.000981	0.001018
64-UUU10	0.159	0.000	0.000	0.000296	0.000307
64-UUU11	2.336	0.000	0.000	0.004349	0.004510
64-UUU12	0.642	0.000	0.000	0.001196	0.001240
64-UUU13	1.060	0.000	0.000	0.001973	0.002046
64-UUU14	0.732	0.000	0.000	0.001362	0.001412
64-UUU15	0.982	0.000	0.000	0.001829	0.001896
64-UUU16	1.719	0.000	0.000	0.003200	0.003319
64-UUU17	1.922	0.000	0.000	0.003577	0.003709
64-UUU18	1.995	0.000	0.000	0.003713	0.003851

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
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Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-UUU19	4.343	0.000	0.000	0.008084	0.008383
64-UUU20	3.301	0.000	0.000	0.006145	0.006372
64-UUU21	1.243	0.000	0.000	0.002314	0.002400
64-UUU22	0.973	0.000	0.000	0.001810	0.001877
64-UUU23	0.058	0.000	0.000	0.000107	0.000111
64-UUU24	2.821	0.000	0.000	0.005251	0.005446
64-UUU25	2.477	0.000	0.000	0.004610	0.004781
64-UUU26	5.529	0.514	0.430	0.105622	0.109534
64-UUU27	8.963	0.305	0.000	0.044228	0.045866
64-UUU28	0.558	0.000	0.000	0.001038	0.001077
64-V18	0.080	0.000	0.000	0.000198	0.000220
64-V19	0.664	0.000	0.000	0.001642	0.001825
64-V23	0.275	0.000	0.000	0.000740	0.000827
64-V24	1.626	0.000	0.000	0.004380	0.004894
64-V27	0.156	0.000	0.000	0.000420	0.000469
64-V32	0.123	0.000	0.000	0.000333	0.000372
64-V33	0.667	0.000	0.000	0.001797	0.002008
64-VV07	0.963	0.000	0.000	0.002381	0.002646
64-VV08	0.880	0.000	0.000	0.002177	0.002418
64-VV09	1.520	0.000	0.000	0.003760	0.004178
64-VV10	1.356	0.000	0.000	0.003354	0.003726
64-VV11	0.927	0.000	0.000	0.002292	0.002547
64-VV12	1.078	0.000	0.000	0.002667	0.002964
64-VV13	0.705	0.000	0.000	0.001744	0.001937
64-VV28	0.626	0.000	0.000	0.001166	0.001209
64-VV30	0.626	0.000	0.000	0.001165	0.001208
64-VVV09	0.337	0.000	0.000	0.000627	0.000650
64-VVV10	0.849	0.000	0.000	0.001581	0.001639
64-VVV11	1.336	0.000	0.000	0.002487	0.002579
64-VVV12	0.325	0.000	0.000	0.000605	0.000628
64-VVV13	0.341	0.000	0.000	0.000635	0.000659
64-W18	0.142	0.000	0.000	0.000351	0.000390
64-W19	1.703	0.000	0.000	0.004212	0.004680
64-W20	0.722	0.000	0.000	0.001828	0.002034
64-W21	0.610	0.000	0.000	0.001643	0.001836
64-W22	0.165	0.000	0.000	0.000444	0.000496
64-W23	1.199	0.000	0.000	0.003230	0.003608
64-W24	1.391	0.000	0.000	0.003748	0.004188
64-W25	0.634	0.000	0.000	0.001707	0.001907
64-W26	1.280	0.000	0.000	0.003448	0.003853
64-W27	0.190	0.000	0.000	0.000512	0.000572
64-W28	0.473	0.000	0.000	0.001274	0.001423
64-W29	0.659	0.000	0.000	0.001774	0.001982
64-W30	0.892	0.000	0.000	0.002403	0.002684
64-W31	0.630	0.000	0.000	0.001697	0.001896
64-W32	0.543	0.000	0.000	0.001464	0.001635
64-WW06	0.237	0.000	0.000	0.000586	0.000652
64-WW08	0.769	0.000	0.000	0.001901	0.002113

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
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Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-WW12	0.973	0.000	0.000	0.002407	0.002674
64-WW13	1.776	0.000	0.000	0.004394	0.004882
64-WW14	0.597	0.000	0.000	0.001477	0.001641
64-WW28	0.642	0.000	0.000	0.001196	0.001240
64-WW29	0.864	0.000	0.000	0.001607	0.001667
64-WW30	0.115	0.000	0.000	0.000214	0.000222
64-WWW17	0.985	0.000	0.000	0.001834	0.001902
64-WWW18	1.145	0.000	0.000	0.002130	0.002209
64-WWW19	1.558	0.000	0.000	0.002900	0.003008
64-WWW20	1.178	0.000	0.000	0.002193	0.002274
64-WWW21	0.526	0.000	0.000	0.000978	0.001015
64-WWW22	1.505	0.000	0.000	0.002802	0.002906
64-WWW24	1.953	0.000	0.015	0.005352	0.005550
64-WWW25	2.221	0.000	0.777	0.092294	0.095713
64-WWW26	0.766	0.000	0.246	0.029306	0.030391
64-WWW27	0.178	0.000	0.000	0.000331	0.000343
64-X16	0.568	0.000	0.000	0.001404	0.001560
64-X18	0.440	0.000	0.000	0.001089	0.001210
64-X19	1.283	0.000	0.000	0.003174	0.003527
64-X20	0.358	0.000	0.000	0.000885	0.000983
64-X21	0.117	0.000	0.000	0.000316	0.000352
64-X22	1.411	0.000	0.000	0.003800	0.004246
64-X23	1.434	0.000	0.000	0.003864	0.004318
64-X24	1.616	0.000	0.000	0.004354	0.004865
64-X25	0.632	0.000	0.000	0.001703	0.001902
64-X26	0.335	0.000	0.000	0.000902	0.001007
64-X27	0.619	0.000	0.000	0.001667	0.001863
64-X28	0.162	0.000	0.000	0.000436	0.000488
64-X29	0.461	0.000	0.000	0.001243	0.001389
64-X30	0.206	0.000	0.000	0.000554	0.000619
64-XX05	1.053	0.220	0.000	0.012740	0.014155
64-XX06	2.461	0.374	0.000	0.023302	0.025891
64-XX07	1.865	0.000	0.000	0.004612	0.005125
64-XX08	0.498	0.000	0.000	0.001231	0.001368
64-XX11	0.609	0.000	0.000	0.001507	0.001675
64-XX12	0.398	0.000	0.000	0.000985	0.001095
64-XX14	1.135	0.000	0.000	0.002807	0.003119
64-XX15	0.844	0.000	0.000	0.002087	0.002319
64-XX16	0.499	0.000	0.000	0.001235	0.001372
64-XX27	0.094	0.000	0.000	0.000176	0.000182
64-XX28	0.565	0.000	0.000	0.001052	0.001091
64-XX29	1.287	0.000	0.000	0.002395	0.002484
64-XXX07	0.453	0.000	0.000	0.000844	0.000875
64-XXX08	0.555	0.000	0.000	0.001034	0.001072
64-XXX09	0.685	0.000	0.000	0.001276	0.001323
64-XXX11	0.041	0.000	0.000	0.000076	0.000079
64-XXX12	1.024	0.000	0.000	0.001907	0.001977
64-XXX17	0.090	0.000	0.000	0.000167	0.000173

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-XXX18	0.604	0.000	0.000	0.001124	0.001166
64-XXX19	0.077	0.000	0.000	0.000143	0.000149
64-XXX20	0.598	0.000	0.000	0.001114	0.001155
64-XXX21	0.113	0.000	0.000	0.000211	0.000218
64-XXX22	0.956	0.000	0.000	0.001779	0.001845
64-XXX23	0.270	0.000	0.273	0.031487	0.032653
64-XXX24	0.164	0.000	0.762	0.086736	0.089949
64-XXX25	0.150	0.000	0.000	0.000279	0.000289
64-Y13	0.014	0.000	0.000	0.000035	0.000039
64-Y14	0.093	0.000	0.000	0.000230	0.000255
64-Y15	0.674	0.000	0.000	0.001667	0.001852
64-Y16	0.069	0.000	0.000	0.000172	0.000191
64-Y17	0.511	0.000	0.000	0.001264	0.001405
64-Y18	0.410	0.000	0.000	0.001015	0.001128
64-Y19	0.630	0.000	0.000	0.001557	0.001730
64-Y20	0.697	0.000	0.000	0.001733	0.001926
64-Y21	0.830	0.000	0.000	0.002235	0.002497
64-Y22	0.384	0.000	0.000	0.001035	0.001157
64-Y23	0.368	0.000	0.000	0.000992	0.001108
64-Y24	0.623	0.000	0.000	0.001679	0.001876
64-Y26	1.087	0.000	0.000	0.002929	0.003273
64-Y27	1.231	0.000	0.000	0.003315	0.003704
64-Y28	0.647	0.000	0.000	0.001742	0.001946
64-Y29	0.805	0.000	0.000	0.002168	0.002422
64-YY05	0.807	0.000	0.000	0.001996	0.002217
64-YY06	0.745	0.522	0.000	0.025891	0.028768
64-YY07	1.496	0.340	0.000	0.019373	0.021525
64-YY08	0.503	0.000	0.000	0.001245	0.001384
64-YY09	0.638	0.000	0.000	0.001578	0.001753
64-YY10	0.638	0.000	0.000	0.001578	0.001753
64-YY11	0.845	0.000	0.000	0.002091	0.002324
64-YY15	0.669	0.000	0.000	0.001656	0.001840
64-YY16	0.417	0.000	0.000	0.001031	0.001146
64-YY17	0.657	0.000	0.000	0.001624	0.001804
64-YY18	0.656	0.000	0.000	0.001622	0.001802
64-YY19	0.455	0.000	0.000	0.001126	0.001251
64-YY27	1.130	0.000	0.000	0.002104	0.002182
64-YY28	0.764	0.000	0.000	0.001423	0.001476
64-YY29	0.761	0.000	0.000	0.001416	0.001468
64-YYY09	0.236	0.000	0.000	0.000440	0.000456
64-YYY1	0.901	0.000	0.000	0.001676	0.001738
64-YYY10	0.652	0.000	0.000	0.001214	0.001259
64-YYY11	1.142	0.000	0.000	0.002125	0.002204
64-YYY12	0.782	0.000	0.000	0.001456	0.001510
64-YYY20	0.250	0.000	0.000	0.000466	0.000483
64-YYY21	0.199	0.000	0.000	0.000370	0.000383
64-YYY22	0.552	0.000	0.063	0.008213	0.008518
64-YYY23	0.850	0.000	0.709	0.081998	0.085035

Mobile Source Analysis
Basin 64 Results (all totals in tons per year)
Year Road Data Reported: 2000
Source of Road Data: Census Bureau
NET Tier Report: SO2 and PM10 for 2001

Grid ID	Total Miles of Road	Total Miles of Interstate	Total Miles of Highway	1999 PM10 Total	1999 SO2 Total
64-Z13	0.787	0.000	0.000	0.001947	0.002164
64-Z14	0.600	0.000	0.000	0.001485	0.001650
64-Z15	1.006	0.000	0.000	0.002489	0.002765
64-Z16	1.020	0.000	0.000	0.002523	0.002803
64-Z17	0.335	0.000	0.000	0.000829	0.000921
64-Z19	0.654	0.000	0.000	0.001617	0.001797
64-Z20	1.691	0.000	0.000	0.004291	0.004776
64-Z21	0.010	0.000	0.000	0.000026	0.000030
64-Z22	0.740	0.000	0.000	0.001993	0.002227
64-Z24	0.623	0.000	0.000	0.001679	0.001876
64-Z26	0.636	0.000	0.000	0.001713	0.001914
64-Z27	0.642	0.000	0.000	0.001730	0.001932
64-ZZ05	0.626	0.000	0.000	0.001548	0.001720
64-ZZ06	0.648	0.000	0.000	0.001602	0.001780
64-ZZ07	0.619	0.558	0.000	0.027251	0.030279
64-ZZ08	1.786	0.303	0.000	0.018394	0.020438
64-ZZ10	0.076	0.000	0.000	0.000189	0.000209
64-ZZ11	0.649	0.000	0.000	0.001604	0.001782
64-ZZ16	0.581	0.000	0.000	0.001437	0.001597
64-ZZ17	0.352	0.000	0.000	0.000870	0.000967
64-ZZ19	0.214	0.000	0.000	0.000529	0.000588
64-ZZ20	0.503	0.000	0.000	0.001244	0.001382
64-ZZ27	0.177	0.000	0.000	0.000329	0.000341
64-ZZ29	0.625	0.000	0.000	0.001163	0.001206

APPENDIX G

MISCELLANEOUS SOURCE EMISSIONS CALCULATIONS

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-A27	0.00019481	0.00000771
64-A28	0.00017038	0.00000674
64-AA13	0.03278231	0.00191494
64-AA14	0.20568417	0.01201482
64-AAA20	0.01264787	0.00030876
64-AAA21	0.04119200	0.00100557
64-AAA22	0.04119200	0.00100557
64-AAA23	0.04119200	0.00100557
64-AAA24	0.04119200	0.00100557
64-AAA25	0.04119200	0.00100557
64-AAA26	0.04119200	0.00100557
64-AAA27	0.04119200	0.00100557
64-AAA28	0.04119200	0.00100557
64-AAA29	0.02981222	0.00072777
64-AAA30	0.01556426	0.00037995
64-AAA31	0.01556426	0.00037995
64-AAA32	0.01556426	0.00037995
64-AAA33	0.01556426	0.00037995
64-AAA34	0.01556426	0.00037995
64-AAA35	0.01556426	0.00037995
64-AAA36	0.01556426	0.00037995
64-AAA37	0.01556426	0.00037995
64-AAA38	0.01236840	0.00030194
64-B24	0.00000058	0.00000002
64-B25	0.00043888	0.00001737
64-B26	0.00111884	0.00004428
64-B27	0.00185245	0.00007331
64-B28	0.00153344	0.00006069
64-B29	0.00020108	0.00000796
64-BB11	0.16691583	0.00975021
64-BB12	0.38396651	0.02242899
64-BB13	0.50460243	0.02947581
64-BB14	0.18460415	0.01078345
64-BBB10	0.00645752	0.00037721
64-BBB20	0.01264869	0.00030878
64-BBB21	0.04119200	0.00100557
64-BBB22	0.04119200	0.00100557
64-BBB23	0.04119200	0.00100557
64-BBB24	0.04119200	0.00100557
64-BBB25	0.04119200	0.00100557
64-BBB26	0.04119200	0.00100557
64-BBB27	0.04119200	0.00100557
64-BBB28	0.03836335	0.00093652
64-BBB29	0.01702927	0.00041572
64-BBB30	0.01556426	0.00037995
64-BBB31	0.01556426	0.00037995
64-BBB32	0.01556426	0.00037995
64-BBB33	0.01556426	0.00037995
64-BBB34	0.01556426	0.00037995
64-BBB35	0.01556426	0.00037995
64-BBB36	0.01556426	0.00037995

Grid ID	PM10	SO2
64-BBB37	0.01556426	0.00037995
64-BBB38	0.01175272	0.00028691
64-C23	0.00040427	0.00001600
64-C24	0.00144222	0.00005708
64-C25	0.00185590	0.00007345
64-C26	0.00185590	0.00007345
64-C27	0.00185590	0.00007345
64-C28	0.00185590	0.00007345
64-C29	0.00064095	0.00002537
64-C36	0.01570553	0.00062157
64-C37	0.01973906	0.00078120
64-CC11	0.06354399	0.00371185
64-CC12	0.49794505	0.02908693
64-CC13	0.13819545	0.00807254
64-CCC10	0.01869290	0.00109193
64-CCC11	0.02841065	0.00165958
64-CCC20	0.01271988	0.00031052
64-CCC21	0.04119200	0.00100557
64-CCC22	0.04119200	0.00100557
64-CCC23	0.04084324	0.00099706
64-CCC24	0.03020493	0.00073736
64-CCC25	0.02195198	0.00053589
64-CCC26	0.01663267	0.00040604
64-CCC27	0.00968617	0.00023646
64-CCC28	0.00821827	0.00020062
64-CCC29	0.01016628	0.00024818
64-CCC30	0.01556426	0.00037995
64-CCC31	0.01556426	0.00037995
64-CCC32	0.01556426	0.00037995
64-CCC33	0.01556426	0.00037995
64-CCC34	0.01556426	0.00037995
64-CCC35	0.01556426	0.00037995
64-CCC36	0.01556426	0.00037995
64-CCC37	0.01556426	0.00037995
64-CCC38	0.00987215	0.00024100
64-D21	0.00017691	0.00000700
64-D22	0.00111123	0.00004398
64-D23	0.00183110	0.00007247
64-D24	0.00185590	0.00007345
64-D25	0.00185590	0.00007345
64-D26	0.00185590	0.00007345
64-D27	0.00185590	0.00007345
64-D28	0.00185590	0.00007345
64-D29	0.00078044	0.00003089
64-D36	0.06990908	0.00276675
64-D37	0.06102382	0.00241510
64-DD12	0.05057998	0.00295457
64-DDD10	0.01099840	0.00064246
64-DDD11	0.28092677	0.01641004
64-DDD12	0.10694720	0.00624721
64-DDD20	0.00154771	0.00003778

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-DDD21	0.02860986	0.00069842
64-DDD22	0.04061787	0.00099156
64-DDD23	0.02362307	0.00057668
64-DDD24	0.01556426	0.00037995
64-DDD25	0.01556426	0.00037995
64-DDD26	0.00817901	0.00019967
64-DDD27	0.00222874	0.00005441
64-DDD28	0.00223454	0.00005455
64-DDD29	0.01204504	0.00029404
64-DDD30	0.01556426	0.00037995
64-DDD31	0.01556426	0.00037995
64-DDD32	0.01556426	0.00037995
64-DDD33	0.01556426	0.00037995
64-DDD34	0.01556426	0.00037995
64-DDD35	0.01556426	0.00037995
64-DDD36	0.01556426	0.00037995
64-DDD37	0.01289008	0.00031467
64-DDD38	0.00087546	0.00002137
64-E21	0.00096183	0.00003807
64-E22	0.00185590	0.00007345
64-E23	0.00185590	0.00007345
64-E24	0.00185590	0.00007345
64-E25	0.00185590	0.00007345
64-E26	0.00185590	0.00007345
64-E27	0.00185590	0.00007345
64-E28	0.00185590	0.00007345
64-E29	0.00089854	0.00003556
64-E34	0.00001468	0.00000058
64-E35	0.00102261	0.00004047
64-E36	0.00183000	0.00007242
64-E37	0.02517209	0.00099622
64-E38	0.00000949	0.00000038
64-EEE10	0.20025070	0.01169743
64-EEE11	0.38207488	0.02231849
64-EEE12	0.27711487	0.01618737
64-EEE13	0.00082196	0.00004801
64-EEE21	0.00077371	0.00001889
64-EEE22	0.02242469	0.00054743
64-EEE23	0.01516873	0.00037030
64-EEE24	0.01556426	0.00037995
64-EEE25	0.01556426	0.00037995
64-EEE26	0.01556426	0.00037995
64-EEE27	0.01556426	0.00037995
64-EEE28	0.01556426	0.00037995
64-EEE29	0.01556426	0.00037995
64-EEE30	0.01556426	0.00037995
64-EEE31	0.01556426	0.00037995
64-EEE32	0.01556426	0.00037995
64-EEE33	0.01556426	0.00037995
64-EEE34	0.01556426	0.00037995
64-EEE35	0.01556426	0.00037995

Grid ID	PM10	SO2
64-EEE36	0.01556426	0.00037995
64-EEE37	0.01214670	0.00029652
64-F20	0.00000001	0.00000000
64-F21	0.00150489	0.00005956
64-F22	0.00185590	0.00007345
64-F23	0.00185590	0.00007345
64-F24	0.00185590	0.00007345
64-F25	0.00185590	0.00007345
64-F26	0.00185590	0.00007345
64-F27	0.00185590	0.00007345
64-F28	0.00185590	0.00007345
64-F29	0.00135707	0.00005371
64-F34	0.00041300	0.00001634
64-F35	0.00185590	0.00007345
64-F36	0.00185590	0.00007345
64-F37	0.00185590	0.00007345
64-F38	0.00116007	0.00004591
64-FFF09	0.08693063	0.00507796
64-FFF10	0.38006708	0.02220121
64-FFF11	0.38519806	0.02250093
64-FFF12	0.38519806	0.02250093
64-FFF13	0.21411759	0.01250745
64-FFF14	0.00021090	0.00001232
64-FFF21	0.01936042	0.00047262
64-FFF22	0.04044190	0.00098726
64-FFF23	0.02158182	0.00052685
64-FFF24	0.01455269	0.00035526
64-FFF25	0.01556426	0.00037995
64-FFF26	0.01556426	0.00037995
64-FFF27	0.01556426	0.00037995
64-FFF28	0.01556426	0.00037995
64-FFF29	0.01556426	0.00037995
64-FFF30	0.01556426	0.00037995
64-FFF31	0.01556426	0.00037995
64-FFF32	0.01556426	0.00037995
64-FFF33	0.01556426	0.00037995
64-FFF34	0.01556426	0.00037995
64-FFF35	0.01556426	0.00037995
64-FFF36	0.01556426	0.00037995
64-FFF37	0.01406867	0.00034344
64-G20	0.00026159	0.00001035
64-G21	0.00185590	0.00007345
64-G22	0.00185590	0.00007345
64-G23	0.00185590	0.00007345
64-G24	0.00185590	0.00007345
64-G25	0.00185590	0.00007345
64-G26	0.00185590	0.00007345
64-G27	0.00184690	0.00007309
64-G28	0.00185590	0.00007345
64-G29	0.00147371	0.00005832
64-G33	0.00008517	0.00000337

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-G34	0.00115643	0.00004577
64-G35	0.00185590	0.00007345
64-G36	0.00185590	0.00007345
64-G37	0.00182760	0.00007233
64-G38	0.00056355	0.00002230
64-GG01	0.03012436	0.00175968
64-GG20	0.01211729	0.00029581
64-GG21	0.03860619	0.00094245
64-GG22	0.03811971	0.00093057
64-GG23	0.03777266	0.00092210
64-GG24	0.03781425	0.00092312
64-GG25	0.03787767	0.00092467
64-GG26	0.03796702	0.00092685
64-GG27	0.03807170	0.00092940
64-GG28	0.03817468	0.00093192
64-GG29	0.03831100	0.00093524
64-GG30	0.03855302	0.00094115
64-GG31	0.03882005	0.00094767
64-GG32	0.03909545	0.00095439
64-GG33	0.03938985	0.00096158
64-GG34	0.03771212	0.00092062
64-GG35	0.01278417	0.00031209
64-GGG09	0.16614712	0.00970531
64-GGG10	0.38386992	0.02242335
64-GGG11	0.38519806	0.02250093
64-GGG12	0.38519806	0.02250093
64-GGG13	0.38519806	0.02250093
64-GGG14	0.19910748	0.01163065
64-GGG20	0.00555999	0.00013573
64-GGG21	0.04086326	0.00099755
64-GGG22	0.04091178	0.00099873
64-GGG23	0.04081096	0.00099627
64-GGG24	0.02277217	0.00055591
64-GGG25	0.01417726	0.00034609
64-GGG26	0.01556426	0.00037995
64-GGG27	0.01556426	0.00037995
64-GGG28	0.01556426	0.00037995
64-GGG29	0.01556426	0.00037995
64-GGG30	0.01556426	0.00037995
64-GGG31	0.01556426	0.00037995
64-GGG32	0.01556426	0.00037995
64-GGG33	0.01556426	0.00037995
64-GGG34	0.01556426	0.00037995
64-GGG35	0.01556426	0.00037995
64-GGG36	0.01556426	0.00037995
64-GGG37	0.01556043	0.00037986
64-GGG38	0.00200499	0.00004895
64-H19	0.00068198	0.00003984
64-H20	0.00130482	0.00006749
64-H21	0.00185590	0.00007345
64-H22	0.00185590	0.00007345

Grid ID	PM10	SO2
64-H23	0.00185590	0.00007345
64-H24	0.00185590	0.00007345
64-H25	0.00185590	0.00007345
64-H26	0.00185590	0.00007345
64-H27	0.00185590	0.00007345
64-H28	0.00185590	0.00007345
64-H29	0.00084149	0.00003330
64-H30	0.00058177	0.00002302
64-H31	0.00112059	0.00004435
64-H32	0.00112102	0.00004437
64-H33	0.00183620	0.00007267
64-H34	0.00185590	0.00007345
64-H35	0.00185590	0.00007345
64-H36	0.00185590	0.00007345
64-H37	0.00075460	0.00002986
64-HH01	0.09784436	0.00571547
64-HH02	0.11399614	0.00665896
64-HH20	0.01302818	0.00031804
64-HH21	0.04119200	0.00100557
64-HH22	0.04119200	0.00100557
64-HH23	0.04119200	0.00100557
64-HH24	0.04119200	0.00100557
64-HH25	0.04119200	0.00100557
64-HH26	0.04119200	0.00100557
64-HH27	0.04119200	0.00100557
64-HH28	0.04119200	0.00100557
64-HH29	0.04119200	0.00100557
64-HH30	0.04119200	0.00100557
64-HH31	0.04119200	0.00100557
64-HH32	0.04119200	0.00100557
64-HH33	0.04119200	0.00100557
64-HH34	0.04119200	0.00100557
64-HH35	0.03862588	0.00094293
64-HH36	0.00768740	0.00018766
64-HHH10	0.12775619	0.00746274
64-HHH11	0.36774623	0.02148150
64-HHH12	0.38519806	0.02250093
64-HHH13	0.38519806	0.02250093
64-HHH14	0.38519084	0.02250051
64-HHH15	0.18604053	0.01086736
64-HHH20	0.00583910	0.00014254
64-HHH21	0.03832575	0.00093560
64-HHH22	0.04091178	0.00099873
64-HHH23	0.04091178	0.00099873
64-HHH24	0.04091164	0.00099873
64-HHH25	0.02533259	0.00061842
64-HHH26	0.01392690	0.00033998
64-HHH27	0.01556426	0.00037995
64-HHH28	0.01556426	0.00037995
64-HHH29	0.01556426	0.00037995
64-HHH30	0.01556426	0.00037995

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-HHH31	0.01556426	0.00037995
64-HHH32	0.01556426	0.00037995
64-HHH33	0.01556426	0.00037995
64-HHH34	0.01556426	0.00037995
64-HHH35	0.01556426	0.00037995
64-HHH36	0.01556426	0.00037995
64-HHH37	0.01556426	0.00037995
64-HHH38	0.00580611	0.00014174
64-I18	0.00646773	0.00037781
64-I19	0.00408558	0.00023865
64-I20	0.00100096	0.00004973
64-I21	0.00185590	0.00007345
64-I22	0.00185590	0.00007345
64-I23	0.00185590	0.00007345
64-I24	0.00185590	0.00007345
64-I25	0.00185590	0.00007345
64-I26	0.00185590	0.00007345
64-I27	0.00185590	0.00007345
64-I28	0.00185590	0.00007345
64-I29	0.00182386	0.00007218
64-I30	0.00185285	0.00007333
64-I31	0.00185590	0.00007345
64-I32	0.00185590	0.00007345
64-I33	0.00185590	0.00007345
64-I34	0.00183592	0.00007266
64-I35	0.00137066	0.00005425
64-I36	0.00116382	0.00004606
64-I37	0.00001301	0.00000051
64-II02	0.13961033	0.00815519
64-II03	0.10296524	0.00601460
64-II20	0.01299963	0.00031735
64-II21	0.04119200	0.00100557
64-II22	0.04119200	0.00100557
64-II23	0.04119200	0.00100557
64-II24	0.04119200	0.00100557
64-II25	0.04119200	0.00100557
64-II26	0.04119200	0.00100557
64-II27	0.04119200	0.00100557
64-II28	0.04119200	0.00100557
64-II29	0.04119200	0.00100557
64-II30	0.04119200	0.00100557
64-II31	0.04119200	0.00100557
64-II32	0.04119200	0.00100557
64-II33	0.04119200	0.00100557
64-II34	0.04119200	0.00100557
64-II35	0.04119200	0.00100557
64-II36	0.03771727	0.00092075
64-II37	0.00496359	0.00012117
64-III11	0.06227696	0.00363784
64-III12	0.32658218	0.01907695
64-III13	0.38519806	0.02250093

Grid ID	PM10	SO2
64-III14	0.38519806	0.02250093
64-III15	0.38499400	0.02248901
64-III16	0.17477199	0.01020912
64-III21	0.01849827	0.00045158
64-III22	0.04091178	0.00099873
64-III23	0.04091178	0.00099873
64-III24	0.04091178	0.00099873
64-III25	0.04091178	0.00099873
64-III26	0.03120636	0.00076181
64-III27	0.01596192	0.00038966
64-III28	0.01556426	0.00037995
64-III29	0.01556426	0.00037995
64-III30	0.01556426	0.00037995
64-III31	0.01556426	0.00037995
64-III32	0.01556426	0.00037995
64-III33	0.01556426	0.00037995
64-III34	0.01556426	0.00037995
64-III35	0.01556426	0.00037995
64-III36	0.01556426	0.00037995
64-III37	0.01556426	0.00037995
64-III38	0.01372458	0.00033504
64-III39	0.00070684	0.00001726
64-J17	0.00255981	0.00014953
64-J18	0.00224728	0.00013127
64-J20	0.00046418	0.00001837
64-J21	0.00185590	0.00007345
64-J22	0.00185590	0.00007345
64-J23	0.00185590	0.00007345
64-J24	0.00185590	0.00007345
64-J25	0.00185590	0.00007345
64-J26	0.00185590	0.00007345
64-J27	0.00185590	0.00007345
64-J28	0.00185590	0.00007345
64-J29	0.00185590	0.00007345
64-J30	0.00185590	0.00007345
64-J31	0.00185590	0.00007345
64-J32	0.00185590	0.00007345
64-J33	0.00178910	0.00007081
64-J34	0.00058538	0.00002317
64-JJ02	0.08044290	0.00469899
64-JJ03	0.26438981	0.01544405
64-JJ04	0.08401419	0.00490760
64-JJ20	0.01296967	0.00031661
64-JJ21	0.04119200	0.00100557
64-JJ22	0.04119200	0.00100557
64-JJ23	0.04119200	0.00100557
64-JJ24	0.04119200	0.00100557
64-JJ25	0.04119200	0.00100557
64-JJ26	0.04119200	0.00100557
64-JJ27	0.04119200	0.00100557
64-JJ28	0.04119200	0.00100557

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-JJ29	0.04119200	0.00100557
64-JJ30	0.04119200	0.00100557
64-JJ31	0.04119200	0.00100557
64-JJ32	0.04119200	0.00100557
64-JJ33	0.04119200	0.00100557
64-JJ34	0.04119200	0.00100557
64-JJ35	0.04119200	0.00100557
64-JJ36	0.02739536	0.00066877
64-JJ37	0.00030610	0.00000747
64-JJJ12	0.02312417	0.00135077
64-JJJ13	0.27227711	0.01590477
64-JJJ14	0.38519806	0.02250093
64-JJJ15	0.38519806	0.02250093
64-JJJ16	0.38460284	0.02246616
64-JJJ17	0.11656090	0.00680878
64-JJJ21	0.00249232	0.00006084
64-JJJ22	0.03341604	0.00081575
64-JJJ23	0.04091178	0.00099873
64-JJJ24	0.04091178	0.00099873
64-JJJ25	0.04091178	0.00099873
64-JJJ26	0.04091178	0.00099873
64-JJJ27	0.03325891	0.00081191
64-JJJ28	0.01649408	0.00040265
64-JJJ29	0.01556426	0.00037995
64-JJJ30	0.01556426	0.00037995
64-JJJ31	0.01556426	0.00037995
64-JJJ32	0.01556426	0.00037995
64-JJJ33	0.01556426	0.00037995
64-JJJ34	0.01551653	0.00037879
64-JJJ35	0.01387448	0.00033870
64-JJJ36	0.01312272	0.00032035
64-JJJ37	0.01538766	0.00037564
64-JJJ38	0.01555555	0.00037974
64-JJJ39	0.00212044	0.00005176
64-K17	0.01273482	0.00074389
64-K20	0.00046456	0.00001839
64-K21	0.00185590	0.00007345
64-K22	0.00185590	0.00007345
64-K23	0.00185590	0.00007345
64-K24	0.00185590	0.00007345
64-K25	0.00185590	0.00007345
64-K26	0.00185590	0.00007345
64-K27	0.00185590	0.00007345
64-K28	0.00184840	0.00007315
64-K29	0.00185590	0.00007345
64-K30	0.00185590	0.00007345
64-K31	0.00185590	0.00007345
64-K32	0.00170862	0.00006762
64-K33	0.00041682	0.00001650
64-KK02	0.00156492	0.00009141
64-KK03	0.21904319	0.01279517

Grid ID	PM10	SO2
64-KK04	0.22272258	0.01301010
64-KK20	0.01294320	0.00031597
64-KK21	0.04119200	0.00100557
64-KK22	0.04119200	0.00100557
64-KK23	0.04119200	0.00100557
64-KK24	0.04119200	0.00100557
64-KK25	0.04119200	0.00100557
64-KK26	0.04119200	0.00100557
64-KK27	0.04119200	0.00100557
64-KK28	0.04119200	0.00100557
64-KK29	0.04119200	0.00100557
64-KK30	0.04119200	0.00100557
64-KK31	0.04119200	0.00100557
64-KK32	0.04119200	0.00100557
64-KK33	0.04119200	0.00100557
64-KK34	0.04119200	0.00100557
64-KK35	0.03151167	0.00076926
64-KK36	0.00104723	0.00002556
64-KKK13	0.00343067	0.00020040
64-KKK14	0.20185674	0.01179124
64-KKK15	0.36859422	0.02153104
64-KKK16	0.14072412	0.00822025
64-KKK17	0.00611261	0.00035706
64-KKK22	0.00727040	0.00017748
64-KKK23	0.03913330	0.00095532
64-KKK24	0.04091178	0.00099873
64-KKK25	0.04091178	0.00099873
64-KKK26	0.04091178	0.00099873
64-KKK27	0.04091178	0.00099873
64-KKK28	0.03499281	0.00085424
64-KKK29	0.01724948	0.00042109
64-KKK30	0.01556426	0.00037995
64-KKK31	0.01507400	0.00036799
64-KKK32	0.00931782	0.00022747
64-KKK33	0.00408504	0.00009972
64-KKK34	0.00045986	0.00001123
64-KKK37	0.00259872	0.00006344
64-KKK38	0.01312373	0.00032038
64-KKK39	0.00153672	0.00003751
64-L17	0.00342116	0.00019984
64-L20	0.00046493	0.00001840
64-L21	0.00185590	0.00007345
64-L22	0.00185590	0.00007345
64-L23	0.00185590	0.00007345
64-L24	0.00185590	0.00007345
64-L25	0.00185590	0.00007345
64-L26	0.00185590	0.00007345
64-L27	0.00185590	0.00007345
64-L28	0.00091613	0.00003626
64-L29	0.00185590	0.00007345
64-L30	0.00185590	0.00007345

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-L31	0.00159060	0.00006295
64-L32	0.00026520	0.00001050
64-LL03	0.06309243	0.00368548
64-LL04	0.14633806	0.00854818
64-LL20	0.01291638	0.00031531
64-LL21	0.04119200	0.00100557
64-LL22	0.04119200	0.00100557
64-LL23	0.04119200	0.00100557
64-LL24	0.04119200	0.00100557
64-LL25	0.04119200	0.00100557
64-LL26	0.04119200	0.00100557
64-LL27	0.04119200	0.00100557
64-LL28	0.04119200	0.00100557
64-LL29	0.04119200	0.00100557
64-LL30	0.04119200	0.00100557
64-LL31	0.04119200	0.00100557
64-LL32	0.04119200	0.00100557
64-LL33	0.04119200	0.00100557
64-LL34	0.03575538	0.00087286
64-LL35	0.00099877	0.00002438
64-LLL15	0.03088565	0.00180415
64-LLL22	0.00005467	0.00000133
64-LLL23	0.01311072	0.00032006
64-LLL24	0.04054263	0.00098972
64-LLL25	0.04091178	0.00099873
64-LLL26	0.04091178	0.00099873
64-LLL27	0.04091178	0.00099873
64-LLL28	0.04091178	0.00099873
64-LLL29	0.03642195	0.00088913
64-LLL30	0.01698261	0.00041458
64-LLL31	0.00387554	0.00009461
64-LLL38	0.00003192	0.00000078
64-M20	0.00046534	0.00001842
64-M21	0.00185590	0.00007345
64-M22	0.00185590	0.00007345
64-M23	0.00185590	0.00007345
64-M24	0.00157583	0.00006237
64-M25	0.00183446	0.00007260
64-M26	0.00185590	0.00007345
64-M27	0.00185590	0.00007345
64-M28	0.00084228	0.00003333
64-M29	0.00121803	0.00004821
64-M30	0.00070338	0.00002784
64-M31	0.00005756	0.00000228
64-MM20	0.01288891	0.00031464
64-MM21	0.04119200	0.00100557
64-MM22	0.04119200	0.00100557
64-MM23	0.04119200	0.00100557
64-MM24	0.04119200	0.00100557
64-MM25	0.04119200	0.00100557
64-MM26	0.04119200	0.00100557

Grid ID	PM10	SO2
64-MM27	0.04119200	0.00100557
64-MM28	0.04119200	0.00100557
64-MM29	0.04119200	0.00100557
64-MM30	0.04119200	0.00100557
64-MM31	0.04119200	0.00100557
64-MM32	0.04119200	0.00100557
64-MM33	0.03973586	0.00097003
64-MM34	0.01955259	0.00047732
64-MM35	0.01455229	0.00035525
64-MM36	0.00853361	0.00020832
64-MMM23	0.00079792	0.00001948
64-MMM24	0.02464872	0.00060172
64-MMM25	0.03904013	0.00095304
64-MMM26	0.04091178	0.00099873
64-MMM27	0.04091178	0.00099873
64-MMM28	0.04091178	0.00099873
64-MMM29	0.04091178	0.00099873
64-MMM30	0.01278578	0.00031213
64-N20	0.00046572	0.00001843
64-N21	0.00185590	0.00007345
64-N22	0.00161790	0.00006403
64-N23	0.00110201	0.00004361
64-N24	0.00011957	0.00000473
64-N25	0.00145012	0.00005739
64-N26	0.00114461	0.00004530
64-N27	0.00024917	0.00000986
64-N28	0.00000723	0.00000029
64-NN20	0.01286524	0.00031407
64-NN21	0.04119200	0.00100557
64-NN22	0.04119200	0.00100557
64-NN23	0.04119200	0.00100557
64-NN24	0.04119200	0.00100557
64-NN25	0.04119200	0.00100557
64-NN26	0.04119200	0.00100557
64-NN27	0.04119200	0.00100557
64-NN28	0.04119200	0.00100557
64-NN29	0.04119200	0.00100557
64-NN30	0.04119200	0.00100557
64-NN31	0.04119200	0.00100557
64-NN32	0.04106151	0.00100239
64-NN33	0.02352508	0.00057429
64-NN34	0.01556426	0.00037995
64-NN35	0.01556426	0.00037995
64-NN36	0.00982338	0.00023981
64-NNN25	0.01885172	0.00046021
64-NNN26	0.04091178	0.00099873
64-NNN27	0.04091178	0.00099873
64-NNN28	0.04091178	0.00099873
64-NNN29	0.04091178	0.00099873
64-NNN30	0.00487816	0.00011909
64-O20	0.00046606	0.00001845

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-O21	0.00185590	0.00007345
64-O22	0.00049200	0.00001947
64-O25	0.00009952	0.00000394
64-OO20	0.01284032	0.00031346
64-OO21	0.04119200	0.00100557
64-OO22	0.04119200	0.00100557
64-OO23	0.04119200	0.00100557
64-OO24	0.04119200	0.00100557
64-OO25	0.04119200	0.00100557
64-OO26	0.04119200	0.00100557
64-OO27	0.04119200	0.00100557
64-OO28	0.04119200	0.00100557
64-OO29	0.04119200	0.00100557
64-OO30	0.04119200	0.00100557
64-OO31	0.04119200	0.00100557
64-OO32	0.02873101	0.00070138
64-OO33	0.01556426	0.00037995
64-OO34	0.01556426	0.00037995
64-OO35	0.01556426	0.00037995
64-OO36	0.00800866	0.00019551
64-OOO25	0.00405566	0.00009901
64-OOO26	0.03796248	0.00092674
64-OOO27	0.04091178	0.00099873
64-OOO28	0.04091178	0.00099873
64-OOO29	0.04091178	0.00099873
64-OOO30	0.00456910	0.00011154
64-P20	0.00032397	0.00001282
64-P21	0.00094457	0.00003738
64-P22	0.00013734	0.00000544
64-PP20	0.01281535	0.00031285
64-PP21	0.04119200	0.00100557
64-PP22	0.04119200	0.00100557
64-PP23	0.04119200	0.00100557
64-PP24	0.04119200	0.00100557
64-PP25	0.04119200	0.00100557
64-PP26	0.04119200	0.00100557
64-PP27	0.04119200	0.00100557
64-PP28	0.04119200	0.00100557
64-PP29	0.04119200	0.00100557
64-PP30	0.04007899	0.00097840
64-PP31	0.03380206	0.00082517
64-PP32	0.01578261	0.00038528
64-PP33	0.01556426	0.00037995
64-PP34	0.01556426	0.00037995
64-PP35	0.01556426	0.00037995
64-PP36	0.00356887	0.00008712
64-PPP26	0.02348280	0.00057326
64-PPP27	0.04091178	0.00099873
64-PPP28	0.04091178	0.00099873
64-PPP29	0.03784422	0.00092385
64-PPP30	0.00092564	0.00002260

Grid ID	PM10	SO2
64-QQ20	0.01279327	0.00031231
64-QQ21	0.04119200	0.00100557
64-QQ22	0.04119200	0.00100557
64-QQ23	0.04119200	0.00100557
64-QQ24	0.04119200	0.00100557
64-QQ25	0.04119200	0.00100557
64-QQ26	0.04119200	0.00100557
64-QQ27	0.04119200	0.00100557
64-QQ28	0.04119200	0.00100557
64-QQ29	0.03926314	0.00095849
64-QQ30	0.01221815	0.00029827
64-QQ31	0.01724509	0.00042099
64-QQ32	0.01556426	0.00037995
64-QQ33	0.01556426	0.00037995
64-QQ34	0.01556426	0.00037995
64-QQ35	0.01556426	0.00037995
64-QQ36	0.00281382	0.00006869
64-QQQ20	0.11222160	0.00273954
64-QQQ21	0.32528110	0.00794073
64-QQQ22	0.17600277	0.00429656
64-QQQ24	0.49249222	0.01202267
64-QQQ26	0.00014729	0.00000360
64-QQQ27	0.01688437	0.00041218
64-QQQ28	0.02095633	0.00051158
64-QQQ29	0.00202506	0.00004944
64-RR20	0.01276675	0.00031166
64-RR21	0.04119200	0.00100557
64-RR22	0.04119200	0.00100557
64-RR23	0.04119200	0.00100557
64-RR24	0.04119200	0.00100557
64-RR25	0.04119200	0.00100557
64-RR26	0.04119200	0.00100557
64-RR27	0.04119200	0.00100557
64-RR28	0.04119200	0.00100557
64-RR29	0.02589883	0.00063224
64-RR30	0.00616156	0.00015042
64-RR31	0.01556426	0.00037995
64-RR32	0.01556426	0.00037995
64-RR33	0.01556426	0.00037995
64-RR34	0.01556426	0.00037995
64-RR35	0.01556337	0.00037993
64-RR36	0.01220178	0.00029787
64-RR37	0.00250834	0.00006123
64-RRR20	0.13971213	0.00341064
64-RRR21	0.42957370	0.01048671
64-RRR22	0.33532746	0.00818598
64-RRR24	3.89505236	0.09508563
64-RRR25	0.29059307	0.00709393
64-RRR28	0.00000455	0.00000011
64-SS20	0.01274112	0.00031104
64-SS21	0.04119200	0.00100557

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-SS22	0.04119200	0.00100557
64-SS23	0.04119200	0.00100557
64-SS24	0.04119200	0.00100557
64-SS25	0.04119200	0.00100557
64-SS26	0.04119200	0.00100557
64-SS27	0.04119200	0.00100557
64-SS28	0.04119200	0.00100557
64-SS29	0.01064932	0.00025997
64-SS30	0.00898572	0.00021936
64-SS31	0.01556426	0.00037995
64-SS32	0.01556426	0.00037995
64-SS33	0.01556426	0.00037995
64-SS34	0.01556426	0.00037995
64-SS35	0.01556426	0.00037995
64-SS36	0.01556426	0.00037995
64-SS37	0.00706439	0.00017246
64-SSS20	0.05258885	0.00128379
64-SSS21	0.17287823	0.00422029
64-SSS22	0.28889594	0.00705250
64-SSS23	0.03013569	0.00073567
64-SSS24	1.72210368	0.04203982
64-SSS25	0.08157142	0.00199131
64-SSS26	1.41549861	0.03455501
64-SSS27	1.57454740	0.03843769
64-SSS28	0.27051432	0.00660377
64-SSS29	0.00037146	0.00000907
64-TT20	0.01271550	0.00031041
64-TT21	0.04119200	0.00100557
64-TT22	0.04119200	0.00100557
64-TT23	0.04119200	0.00100557
64-TT24	0.04119200	0.00100557
64-TT25	0.04119200	0.00100557
64-TT26	0.04119200	0.00100557
64-TT27	0.04119200	0.00100557
64-TT28	0.03670847	0.00089612
64-TT29	0.00029769	0.00000727
64-TT30	0.01099753	0.00026847
64-TT31	0.01556426	0.00037995
64-TT32	0.01556426	0.00037995
64-TT33	0.01556426	0.00037995
64-TT34	0.01556426	0.00037995
64-TT35	0.01556426	0.00037995
64-TT36	0.01556426	0.00037995
64-TT37	0.00899055	0.00021948
64-TTT16	0.00106780	0.00002607
64-TTT22	0.13994702	0.00341637
64-TTT23	0.01411806	0.00034465
64-TTT26	11.04590210	0.26965146
64-TTT27	19.65491147	0.47981375
64-TTT28	4.32228802	0.10551527
64-UU20	0.01252107	0.00030566

Grid ID	PM10	SO2
64-UU21	0.04119200	0.00100557
64-UU22	0.04119200	0.00100557
64-UU23	0.04119200	0.00100557
64-UU24	0.04119200	0.00100557
64-UU25	0.04119200	0.00100557
64-UU26	0.04119200	0.00100557
64-UU27	0.04119200	0.00100557
64-UU28	0.02923334	0.00071364
64-UU30	0.01241565	0.00030309
64-UU31	0.01556426	0.00037995
64-UU32	0.01556426	0.00037995
64-UU33	0.01556426	0.00037995
64-UU34	0.01556426	0.00037995
64-UU35	0.01556426	0.00037995
64-UU36	0.01523886	0.00037201
64-UU37	0.00646303	0.00015777
64-UUU15	0.03024395	0.00073831
64-UUU16	0.06151697	0.00150175
64-UUU17	0.02840198	0.00069335
64-UUU18	0.06309512	0.00154027
64-UUU19	0.05509275	0.00134492
64-UUU20	0.04169312	0.00101781
64-UUU21	0.09462137	0.00230989
64-UUU22	0.09517361	0.00232337
64-UUU23	0.10170732	0.00248287
64-UUU24	6.90184406	0.16848713
64-UUU25	13.20023649	0.32224286
64-UUU26	11.82617183	0.28869933
64-UUU27	5.88592181	0.14368654
64-UUU28	0.29955179	0.00731263
64-VV20	0.01249212	0.00030496
64-VV21	0.04119200	0.00100557
64-VV22	0.04119200	0.00100557
64-VV23	0.04119200	0.00100557
64-VV24	0.04119200	0.00100557
64-VV25	0.04119200	0.00100557
64-VV26	0.04119200	0.00100557
64-VV27	0.04119200	0.00100557
64-VV28	0.02426864	0.00059244
64-VV30	0.01373996	0.00033542
64-VV31	0.01556426	0.00037995
64-VV32	0.01556426	0.00037995
64-VV33	0.01556426	0.00037995
64-VV34	0.01556426	0.00037995
64-VV35	0.01556426	0.00037995
64-VV36	0.01554284	0.00037943
64-VV37	0.00741768	0.00018108
64-VV38	0.00009019	0.00000220
64-VVV15	0.00076285	0.00001862
64-VVV16	0.01206471	0.00029452
64-WW20	0.01247796	0.00030461

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-WW21	0.04119200	0.00100557
64-WW22	0.04119200	0.00100557
64-WW23	0.04119200	0.00100557
64-WW24	0.04119200	0.00100557
64-WW25	0.04119200	0.00100557
64-WW26	0.04119200	0.00100557
64-WW27	0.04119200	0.00100557
64-WW28	0.01838793	0.00044888
64-WW29	0.00137034	0.00003345
64-WW30	0.01549293	0.00037821
64-WW31	0.01556426	0.00037995
64-WW32	0.01556426	0.00037995
64-WW33	0.01556426	0.00037995
64-WW34	0.01556426	0.00037995
64-WW35	0.01556426	0.00037995
64-WW36	0.01556426	0.00037995
64-WW37	0.01556426	0.00037995
64-WW38	0.00743871	0.00018159
64-WWW17	0.08162157	0.00199254
64-WWW18	0.10174114	0.00248369
64-WWW19	0.08909262	0.00217492
64-WWW20	0.07127950	0.00174007
64-WWW21	0.10174114	0.00248369
64-WWW22	0.10174114	0.00248369
64-WWW23	0.10174114	0.00248369
64-WWW24	7.93511999	0.19371136
64-WWW25	7.96586337	0.19446186
64-WWW26	0.49186471	0.01200735
64-WWW27	0.00007591	0.00000185
64-XX20	0.01246595	0.00030432
64-XX21	0.04119200	0.00100557
64-XX22	0.04119200	0.00100557
64-XX23	0.04119200	0.00100557
64-XX24	0.04119200	0.00100557
64-XX25	0.04119200	0.00100557
64-XX26	0.04119200	0.00100557
64-XX27	0.04103869	0.00100183
64-XX29	0.00594119	0.00014504
64-XX30	0.01556426	0.00037995
64-XX31	0.01556426	0.00037995
64-XX32	0.01556426	0.00037995
64-XX33	0.01556426	0.00037995
64-XX34	0.01556426	0.00037995
64-XX35	0.01556426	0.00037995
64-XX36	0.01556426	0.00037995
64-XX37	0.01556426	0.00037995
64-XX38	0.01371074	0.00033471
64-XX39	0.00001871	0.00000046
64-XXX17	0.01030633	0.00025160
64-XXX18	0.07325826	0.00178837
64-XXX19	0.05726954	0.00139806

Grid ID	PM10	SO2
64-XXX20	0.09660687	0.00235836
64-XXX21	0.10036391	0.00245007
64-XXX22	0.10174114	0.00248369
64-XXX23	0.16176144	0.00394890
64-XXX24	0.92964136	0.02269431
64-XXX25	1.39611452	0.03408181
64-XXX26	0.69246167	0.01690431
64-YY20	0.01252592	0.00030578
64-YY21	0.04119200	0.00100557
64-YY22	0.04119200	0.00100557
64-YY23	0.04119200	0.00100557
64-YY24	0.04119200	0.00100557
64-YY25	0.04119200	0.00100557
64-YY26	0.04119200	0.00100557
64-YY27	0.02739654	0.00066880
64-YY28	0.01988255	0.00048537
64-YY29	0.03255929	0.00079483
64-YY30	0.01556426	0.00037995
64-YY31	0.01556426	0.00037995
64-YY32	0.01556426	0.00037995
64-YY33	0.01556426	0.00037995
64-YY34	0.01556426	0.00037995
64-YY35	0.01556426	0.00037995
64-YY36	0.01556426	0.00037995
64-YY37	0.01556426	0.00037995
64-YY38	0.01556426	0.00037995
64-YY39	0.00134990	0.00003295
64-YYY20	0.01462318	0.00035698
64-YYY21	0.00855676	0.00020889
64-YYY22	0.08231753	0.00200953
64-YYY23	1.01552285	0.02479084
64-YYY24	1.39611452	0.03408181
64-YYY25	1.03844996	0.02535054
64-YYY26	0.01857771	0.00045352
64-ZZ20	0.01261285	0.00030790
64-ZZ21	0.04119200	0.00100557
64-ZZ22	0.04119200	0.00100557
64-ZZ23	0.04119200	0.00100557
64-ZZ24	0.04119200	0.00100557
64-ZZ25	0.04119200	0.00100557
64-ZZ26	0.04119200	0.00100557
64-ZZ27	0.04100176	0.00100093
64-ZZ28	0.04119200	0.00100557
64-ZZ29	0.03220840	0.00078627
64-ZZ30	0.01556426	0.00037995
64-ZZ31	0.01556426	0.00037995
64-ZZ32	0.01556426	0.00037995
64-ZZ33	0.01556426	0.00037995
64-ZZ34	0.01556426	0.00037995
64-ZZ35	0.01556426	0.00037995
64-ZZ36	0.01556426	0.00037995

Miscellaneous Source Analysis
Basin 64 Results (all totals in tons per year)
Source of Population Density Data: Census Bureau
Source of Misc. Emissions Data: NET Tier Report
NET Tier Report: SO2 and PM10 for 2001

Grid ID	PM10	SO2
64-ZZ37	0.01556426	0.00037995
64-ZZ38	0.01479202	0.00036110
64-ZZ39	0.00012851	0.00000314
64-ZZZ22	0.00030521	0.00000745
64-ZZZ23	0.01061619	0.00025916
64-ZZZ24	0.45418197	0.01108745
64-ZZZ25	0.06693885	0.00163410

Grid ID	PM10	SO2

APPENDIX H

POST PROCESSING ROUTINE

```
C-----------------------------------------------------------------------
C PURPOSE: Combine two binary output files from AERMOD or ISC, representing
current
C impacts and baseline impacts into a single increment impact output file.
This is
C accomplished by reading the following input files:
C
C    1) A receptor file that represents the receptor set exactly as used in
the
C       AERMOD or ISC modeling for both current and baseline impacts,
C    2) A current impact file that is a binary output file from AERMOD or ISC
for
C       a single averaging period of 1-hour to 24-hours or 1-year representing
the
C       current impacts at receptors in the exact same order as those in the
C       receptor and baseline impact file,
C    3) A baseline impact file that is a binary output file from AERMOD or ISC
for
C       a single averaging period of 1-hour to 24-hours or 1-year representing
the
C       current impacts at receptors in the exact same order as those in the
C       receptor and current impact file.
C
C The program first reads all of the x and y coordinates from the receptor
file to
C be used during output of results.  This is done because the binary files
from the
C AERMOD and ISC files does not retain receptor location information from the
modeling
C that produced those files.
C
C After the receptor information is gathered, the program chronologically
reads the
C predicted current and baseline impacts from the two binary files for every
receptor,
C one averaging period at a time.  The program performs two read functions for
a
C single averaging period in gathering the impact results for every receptor,
reading
C from both the current and baseline files.  The baseline result is subtracted
from
C the current result to determine the net increment impact, which is repeated
for each
C receptor for the period being processed.
C
C The program keeps track of the highest increment impact and the second
highest
C increment impact at each receptor as the program works chronologically
through each
C of the current and baseline files in parallel.  The high and second high
value for
C each receptor are stored in a two dimensional variable with the first
dimension
C representing what receptor (in sequence) it represents and the second
dimension
C representing whether it is the high or the second high.
C
C For each receptor and period of the year, the newly calculated increment
impact
C is compared to the stored highest impact for that receptor.  If the new
increment
C impact is higher than the stored high, then the information for the new
increment
C impact replaces that for the existing high which is in turn used to replace
that
C of the existing second high.
C
```

```
C If the new increment impact is not higher than the stored high for that
receptor,
C then it is compared to the second high for that receptor.  If the increment
impact
C is higher than the stored second high for the given receptor, then the data
for
C the new increment impact replaces that for the stored second high
concentration.
C
C These calculations and comparisons are repeated until every averaging period
of
C the binary files is processed.  In the end, a high value and a second high
value
C is stored for every receptor.  An output file is generated showing the
second high
C concentration, receptor location and elevation, averaging period, source
group,
C rank and date for each receptor.  The receptor location and elevation are
obtained
C from the receptor set file processed at the beginning of the program.  It is
C imperitive that the oder of receptors in the receptor set file be identical
to that
C used to generate the binary files, both of which must also be the same.  It
is best
C to use the same receptor file for current impact and baseline impact
modeling as
C well as for post-processing in this program.
C
C ARGUMENTS:
C   PASSED:
C     File unit 5, current.dat = binary data for current impacts
C     File unit 6, baseline.dat = binary data for baseline impacts
C     conc(i,1) = initialized (-9999) variable for high impact at receptor i
C     conc(i,2) = initialized (-9999) variable for second high impact at
receptor i
C     idateh(i) = initialized (-9999) variable for date of high impact at
receptor i
C     idate2h(i) = initialized (-9999) variable for date of second high impact
at
C                  receptor i
C     ir = number of receptors in the receptor file
C
C   RETURNED:
C     ir = number of receptors in the receptor file
C     x(i) = x coordinate of receptor i
C     y(i) = y coordinate of receptor i
C     e(i) = elevation of receptor i
C     srcid = source group identifier
C     conc(i,1) = high impact at receptor i
C     conc(i,2) = second high impact at receptor i
C     idateh(i) = date of high impact at receptor i
C     idate2h(i) = date of second high impact at receptor i
C     istep = averaging period
C
C LIMITATIONS: NONE
C
C I/O:
C   INPUT:
C     File units 1 through 30 binary data impacts
C     File unit 33, receptor.dat = receptor set from the dispersion modeling
C
C   OUTPUT:
C     File unit 31, incremnt.dat = ascii file of increment consumption at each
receptor
C
C EXTERNALS: NONE
C
```

```
C (ORIGINALLY WRITTEN BY:   Robert J. Hammer)
C----------------------------------------------------------------------
C***  OPEN THE INPUT CONC FILE FOR THE CURRENT PROCESSING YEAR
C

       integer idateh(5000),idate2h(5000)
       real conc(5000,2),x(5000),y(5000),e(5000),factor(30)
       character*8 srcid
       character*12 filenm(30),infile

       open(32,file='getincss.inp',status='old')
       read(32,*)inumfil
       if(inumfil.gt.30) go to 1051
       open(31,file='incremnt.dat',status='new')
       do 10 i101 = 1,inumfil
         read(32,*) filenm(i101),factor(i101)
         print*,filenm(i101),factor(i101)
         infile=filenm(i101)
         open(i101,file=infile,form='unformatted',status='old',
     &        err=1050)
         rewind(i101)
10     continue

       read(32,*)inumdays

       infile='receptor.dat'
       open(33,file=infile,status='old',err=1050)

       call getrec(ir,x,y,e)

C       write(*,*) 'Enter number of receptors: '
C       read(*,*) ir

       do 100 i=1,5000
          conc(i,1) = -9999.
          conc(i,2) = -9999.
          idateh(i) = -9999
          idate2h(i) = -9999
  100  continue

       do 210 m=1,inumdays

C         print*,' Entering do 210 m=1,365'

          call getconc(srcid,conc,idateh,idate2h,istep,ir,
     +                 inumfil,factor)

          if (istep.gt.24) go to 230

          if (istep.le.24) then

C            print*,'Entering if (istep.le.24) then'

C            print*,' ISTEP = ',istep

             i1 = istep + 1

             do 220 n=i1,24,istep

C               print*,'Entering do 220 n=i1,24,istep'

                call getconc(srcid,conc,idateh,idate2h,istep,ir,
     +                       inumfil,factor)


220          continue
```

```
          end if

210    continue

230   continue

C       print*,' ir = ',ir

       do 310 iline=1,6

          write(31,1030)

310    continue


       if(istep.le.24) then

          write(31,1040)
          write(31,1045)

       else

          write(31,1060)
          write(31,1065)

       endif


       do 400 k=1,ir

          if(istep.le.24) then

             write(31,1010) x(k),y(k),conc(k,2),e(k),istep,srcid,
     +                      idate2h(k)

          else

             write(31,1020) x(k),y(k),conc(k,1),e(k),srcid,istep

          endif

  400  continue

1010  format(3(1X,F13.5),1X,F8.2,I5,'-HR',2X,A8,'  2ND       ',I8)
1020  format(3(1X,F13.5),1X,F8.2,'     0.00  PERIOD  ',A8,I10)
1030  format('*',71X,' ')
1040  format('*        X             Y          CONC       ZELEV    ',
     +       ' AVE     GRP       HIVAL     DATE')
1045  format('*  _____________   _____________   _____________   ______   ',
     +       '_____  ________  ________  ________')
1060  format('*        X             Y          CONC       ZELEV    ',
     +       'ZFLAG    AVE     GRP      NUM HRS')
1065  format('*  _____________   _____________   _____________   ______   ',
     +       '______  ______  ________  ________')

      goto 999

C***  PROCESS ERROR MESSAGES
C
1050  write(*,*)    'ERROR OPENING INPUT CONC FILE :',infile
      STOP

1051  write(*,*) 'Error: Number of input conc files exceeds 30'
      stop

999   stop
      end
```

```
C
C#########################################################################
      SUBROUTINE GETCONC(s,c,ih,i2h,is,ircps,inf,fac)
C-------------------------------------------------------------------------
C PURPOSE: Read binary concentration records to get the current and baseline
impacts
C for each receptor for the averaging period being processed.  For each
receptor,
C subtract the baseline impact from the current to get the increment impact at
each
C receptor for the current averaging period.  For each receptor, determine if
the
C new increment impact is now higher than the recorded high increment impact
and if
C so then:
C
C 1) Make the second high concentration what was the high concentration
C 2) Make the high concentration the new calculated increment impact.
C
C For each receptor, if the new calculated increment impact is less than the
C present high concentration and more than the second high concentration then:
C
C 1) Make the second high concentration the new calculated increment impact.
C
C For each receptor, if the new calculated increment impact is less than the
C present second high concentration then no changes are made to the present
high
C or second high concentrations.
C
C ARGUMENTS:
C   PASSED:
C     ircps = number of receptors in the receptor file
C
C
C
C
C   RETURNED:
C     s = source group identifier
C     c(i,1) = high impact at receptor i
C     c(i,2) = second high impact at receptor i
C     ih(i) = date of high impact at receptor i
C     i2h(i) = date of second high impact at receptor i
C     is = averaging period
C     conca(i) = current impact at receptor i
C     concb(i) = baseline impact at recptor i
C     idate = time and date of present averaging period
C     conctst(i) = calculated increment impact at receptor i
C
C LIMITATIONS: NONE
C
C I/O:
C   INPUT:
C     File units 1 through 30, binary data impacts
C
C   OUTPUT: NONE
C
C EXTERNALS: NONE
C
C (ORIGINALLY WRITTEN BY:   Robert J. Hammer)
C-------------------------------------------------------------------------
C

       integer ubin,ih(5000),i2h(5000)
       real conca(30,5000),c(5000,2),conctst(5000),fac(30)
       real conctst1(5000)
       character*8 s
```

```
C      print*,' Entering GETCONC'

       do 1010 i102 = 1,inf
         ubin = i102
         call getbin(idate,is,s,conca,ubin,ircps,i102)
1010   continue

C      print*,' ircps = ',ircps
C      print*,' is = ',is

       do 1020 j1=1,ircps
         conctst1(j1) = 0.0
1020   continue

       do 300 j=1,ircps
          do 1030 j2 = 1,inf
            conctst(j) = conctst1(j) + (conca(j2,j)*fac(j2))
            conctst1(j) = conctst(j)
1030      continue
          if ((conctst(j).lt.0.00001)
     &       .and.(conctst(j).gt.(-0.00001))) then
             conctst(j) = 0.0
          endif

          if (conctst(j).gt.c(j,1)) then

             if (is.le.24) then
                c(j,2) = c(j,1)
                i2h(j) = ih(j)
             end if
             c(j,1) = conctst(j)
             ih(j) = idate

          else if ((conctst(j).gt.c(j,2)).and.
     &             (conctst(j).lt.c(j,1)).and.
     &             (is.le.24)) then
             c(j,2) = conctst(j)
             i2h(j) = idate

          end if
  300  continue

       iyy = (idate-mod(idate,1000000))/1000000
       imm = (idate-iyy*1000000-mod(idate,10000))/10000
       idd = (idate-iyy*1000000-imm*10000-mod(idate,100))/100
       ihh = idate-iyy*1000000-imm*10000-idd*100

       write(*,121) iyy,imm,idd,ihh

121    format(' Reading Binary Year:',i3,' Month:',i3,' Day:',i3,
     +        ' Hour:',i3)

C      print*,' Leaving GETCONC'

       return
       end

C#######################################################################
      SUBROUTINE GETBIN(D,H,S,C,U,K,IN)
C-----------------------------------------------------------------------
C PURPOSE: READ BINARY CONCENTRATION RECORD.
C
C ARGUMENTS:
C   PASSED:
C     U = File unit being read
C     K = number of receptors in the receptor file
C
```

```
C   RETURNED:
C     S = source group identifier
C     H = averaging period
C     C = impact at receptor i
C     D = time and date of present averaging period
C
C LIMITATIONS: NONE
C
C I/O:
C   INPUT: NONE
C   OUTPUT: CONCENTRATION RECORD
C
C EXTERNALS: NONE
C
C (ORIGINALLY WRITTEN BY:   Robert J. Hammer)
C-----------------------------------------------------------------------
C
      integer d,h,u
      real c(30,5000)
      character*8 s

C     print*,' Entering GETBIN'

      read(u) d,h,s,(c(in,i),i=1,k)

C     print*,' Leaving GETBIN'



      return
      end


C#######################################################################
      SUBROUTINE GETREC(jr,xcoord,ycoord,elev)
C-----------------------------------------------------------------------
C PURPOSE: READ THE RECEPTOR FILE.
C
C ARGUMENTS:
C   PASSED:
C
C
C
C
C   RETURNED:
C     jr = number of receptors in the receptor file
C     xcoord(i) = x coordinate of receptor i
C     ycoord(i) = y coordinate of receptor i
C     elev(i) = elevation of receptor i
C
C LIMITATIONS: NONE
C
C I/O:
C   INPUT:
C     File unit 33, receptor.dat = receptor set from the dispersion modeling
C
C   OUTPUT: NONE
C
C EXTERNALS: NONE
C
C (ORIGINALLY WRITTEN BY:   Robert J. Hammer)
C-----------------------------------------------------------------------
C
C***  Read the receptor file
C

       character*80 dataline,data1,data2
```

```
       real xcoord(5000),ycoord(5000),elev(5000)
       rewind(33)
       jr = 0
100    read(33,10,end=999,err=1050) dataline
       write(*,*) dataline
       if((dataline(1:2).eq.'re').or.(dataline(1:2).eq.'RE')) then
          jr = jr + 1
          backspace(33)
          read(33,*,end=999,err=1050)data1,data2,xcoord(jr),ycoord(jr)
     +                               ,elev(jr)
          write(*,20) xcoord(jr),ycoord(jr),elev(jr)
       else
          go to 100
       endif
       go to 100
10     format(a80)
20     format(3f13.4)
       goto 999
C***  PROCESS ERROR MESSAGES
C
1050  write(*,*)    'READ/WRITE ERROR WITH INPUT FILE :'
      STOP
999   return
      end
```